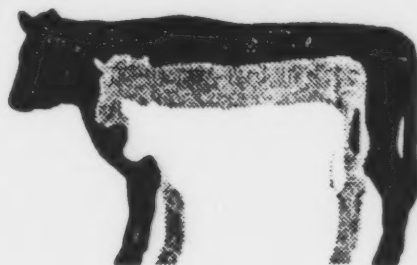


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OPENING REMARKS
BOB DRYSDALE, CONFERENCE CHAIRMAN

Welcome to the twelfth annual What's In Stock For You? Conference entitled "Strategies '91 - Beef and Forage Decisions".

This conference is a direct result of producers telling us what they needed and how they wanted it delivered. That's why we ask you to complete the evaluation forms enclosed in your registration packages. This conference continues a series of producer/industry driven conferences. Two conferences ago, we looked at the changing meat industry and what types of animals would fit the upcoming value-based markets in North America. Our last conference looked at tying reproductive performance with farm resources to develop an efficient farm, breeding and business plan. It also took a look at the family aspects of the farm business operation.

This conference looks at maximizing returns through management decisions that you make in the forage and marketing areas. It will also look at management decisions on moving product "on the hoof" and moving the position of our industry "in the store".

Let's step back from our operations at home and take a look at some ideas. Let these ideas challenge the way you do things now. Let others' experiences give you ideas of new ways you can do things in your operation.

If the beef industry is to survive and flourish at the grocers' shelf, we need to look at our industry as a unified and efficient system to convert inedible plant proteins into highest quality meat proteins. We have to sell this concept to ourselves before we can sell our product to those who wish to buy it.

Bob Drysdale P.Ag., CAS
Conference Chairman



Range Management and Range Improvement - A Synopsis

P. R. Horton, Research Scientist
Forage Agronomy and Range Management
Agriculture Canada Research Branch
Melfort, Saskatchewan

Range refers to land (generally non-cultivated) which supports vegetation suitable for grazing. This includes grassland, shrubland, and grazeable forestland. Approximately 25 million ha (62 million acres) of range are used for cattle grazing in western Canada. Only 10 million ha (25 million acres) of land are used for cultivated forage production in all of Canada. In Saskatchewan there is an estimated 10 million ha (25 million acres) of range used by both cattle and wildlife covering about 25% of the province's land base. The range resource in western Canada is of underestimated importance.

Both overuse and underuse of a range can result in its deterioration or retrogression. This means that range condition, or the health of a given range, will decline over time with a reduction in the productivity of the most desirable forage plants (decreaser species). There will then be an associated reduction in livestock carrying capacity which will likely be accompanied with a simultaneous increase in less desirable plants (increaser species).

Range management is a discipline founded on ecological principles which seeks the optimum use of range and range

resources in an environmentally sustainable manner. This includes management of range for optimum use of watersheds, wildlife habitat, recreation, and aesthetics, in addition to grazing by livestock. For livestock grazing, range management involves decisions related to stocking rates, season of grazing, duration of grazing, frequency of grazing, grazing systems and various range improvement techniques.

For livestock producers using range resources, optimum range management practices are of vital importance economically. Ultimately livestock producers are not simply marketing their livestock, but the forage resources of their range and cultivated lands which have been harvested and converted to a sellable product by their livestock. Cattlemen are marketing the sunshine, water and forages of the range through the sale of their livestock. Therefore management of the range for maximum capture of sunshine , conservation of water and production of the most desirable forages, are all of vital economic importance to the livestock producer.

Range improvement refers to special treatments, developments, and structures used to improve range forage resources or to facilitate their use by grazing animals. These include options such as prescribed burns, fertilization, weed control, fencing, and development of watering facilities.

Effective range management and range improvement are both accomplished through a clear planning process. This planning

process begins with the clarification of an operator's values, and a physical inventory and an operational inventory of a ranching facility. Range management goals may then be established with appropriate annual and multi-year operational plans being developed and executed. The planning process is a perennial decision making exercise which allows for the optimum use of the range resources available to a given range operator.

For specific information consult your local:

Extension Agrologist

Regional Rangeland Specialist

Regional Coordinator, SSGA - Grazing & Pasture Technology Program

For further reading consult:

Managing Saskatchewan Rangeland. New Pastures and Grazing Technologies Project

Range Plan Development: A Practical Guide to Planning for Management and Improvement of Saskatchewan Rangeland. New Pastures and Grazing Technologies Project.

Management of Prairie Rangeland. Agriculture Canada Publication #1589/E



RANGE MANAGEMENT AND IMPROVEMENT

- J.T. Romo - University of Saskatchewan
Saskatoon, Saskatchewan

Introduction

After agreeing to give this presentation on planning and range management, I was thinking over the topics on which I could speak. For some reason my thoughts turned to summer holidays. Each summer my wife and I break away from our jobs and city life and head to secluded locations where we camp, enjoy grilled steaks over the campfire, observe wildlife, hike, enjoy the landscape, fish, photograph the plants, animals and scenery, and spend time mulling over many issues. We always take fond memories home. Later I realized my mind was wandering because I was contemplating the many aspects of range planning and range management.

Many products are taken from rangeland. Some are consumable such as the grass that is grazed and the beef produced, the fish caught in the streams, petroleum, and the wildlife taken by hunters. Non-consumable products in the traditional sense are the beautiful landscapes and fresh air, or hiking, photography, and observation of plants and animals. Another important non-consumable commodity that is available on rangeland is the spiritual uplifting people experience after emerging themselves in the values of rangeland. These experiences of freedom, space, solitude, and soul searching may be major reasons why people return to rangeland.

Many products of rangeland such as water, timber, forage for livestock and wildlife, and wildlife habitat are renewable. Some products such as minerals, coal, and gas are however, not renewable.

What I have just described is the fact that range is a resource and not a use. Range management is not only planning and management of livestock grazing, but it is the art and science of managing a multitude of resources, ranging from livestock grazing to scenic values to recreation to watersheds to wildlife habitat to energy development, and so on to achieve a predetermined goal. In other words, it is goal directed multiple-use management. It is management for those resources that society deems most desirable, and those desired commodities change through time and from place-to-place.

Problem

Livestock grazing has generally been considered the traditional use of rangeland; production and the welfare of other ecosystem components have taken the back seat. Rangeland ecosystems, all organisms and their interactions within a common environment, have taken a beating in many cases because of this default management style. Rangeland has been managed by people as though it was theirs rather than being temporary stewards.

As society becomes environmentally sensitized, the issue of livestock grazing along with the other activities associated with livestock production and its impact on the environment will continue to surface. Supporters of livestock production are finding themselves in a position of reacting to allegations of mis-management of resources that they did not seriously consider before.

With increased environmental awareness there have been movements to have livestock removed from rangeland. You have heard, read, or seen the slogans "no moo by 92" or "Cattlefree by 93". These campaigns have produced much polarization of opinions.

Some people claim that livestock grazing is causing significant environmental and ecological degradation, and all livestock should be eliminated on rangeland. Generally that assessment of the health of rangeland ecosystems is correct, but there is much room for improving the reasoning in solving the real cause of the problem. On the other hand, many livestock managers claim cows are not causing damage and that grazing is essential to the function of ecosystems. I think the truth of the first claim has been stretched to the limit, but I cautiously empathize with the second opinion. Proponents of grazing visualize good range management and opponents are seeing the bad.

Portions of both arguments are valid in essence, but there is much room for improvement in addressing the grazing issue. It is not acceptable just to remove or maintain livestock on range, but management must be increased to eliminate the environmental and ecological consequences of livestock grazing if we are to realize true multiple-use management. Although it is not absolutely stated, my interpretation of the anti-grazing sentiment is that demands are being made for management of all resources, not only grazing on rangeland.

People are realizing that we have a finite land base in this world and we can not tolerate deterioration of any resource. No longer are people content to see permanent modification of ecosystems, desertification, deterioration of wildlife habitat, degeneration of riparian zones, reduction in biodiversity, and single use management; especially given the fact that there are better alternatives. This sentiment will get stronger in the future as people become better educated, organized, strengthen their land use ethics and connections to the land, and scrutinize what is being done on the landscape.

The product of this awareness will be increased frequency and intensity of conflicts until a concerted effort is made to improve management of all rangeland resources. Furthermore, these criticisms are methods of demanding excellence in range management, something that is not being achieved, but is something that should be demanded and practised by all of us.

Solutions

What can be done to solve this dilemma or how should this dilemma be addressed?

The first step in resolving this issue will require the acceptance of the concept of multiple use. We cannot stick our heads in the sand and ignore public outcries, for multiple use ideals will not go away. Quick acceptance of multiple use can lead to prevention and quick resolution of conflicts.

Each manager of rangeland must admit that things are not as rosy as we think and want others to believe, and that proper management must be implemented regardless of whether the resource is forage, the landscapes, wildlife habitat and the like. Until all stewards of rangeland implement proper management practices for all resources, everyone involved in range management, including me, will continue to be criticized.

About now I can imagine that many stewards of land envisage hordes of people tramping across the range to watch birds, hike, photograph, and engage in other activities, causing great inconvenience and disruption. All activities on rangeland must be based on carrying capacities and sustainable levels of use so that a balance in use of resources can be realized and conflicts prevented. This can also be viewed as an untapped opportunity for rural diversification because it is obvious that people are willing to spend substantial amounts of money for recreation.

Another aspect that will be crucial in developing multiple use plans is that a co-operative approach to setting goals and solving problems be applied rather than one-sided approaches and rejection of alternative ideas and philosophies. Our own individual opinions are not the only correct ones. Mutual trust and respect must evolve among players while developing acceptable compromises.

Development of multiple-use management of rangeland resources must be open and orderly. Management plans must be developed, and if these plans are to be successful, they must have well defined goals, recognize carrying capacities, and be sustainable. These plans will be successful only when they are ecologically based and when they incorporate a landscape and ecosystem approach to management because range ecosystems are functional units with all components being interconnected. Any management activity will influence all constituents of the ecosystem; the challenge is to prevent negative impacts.

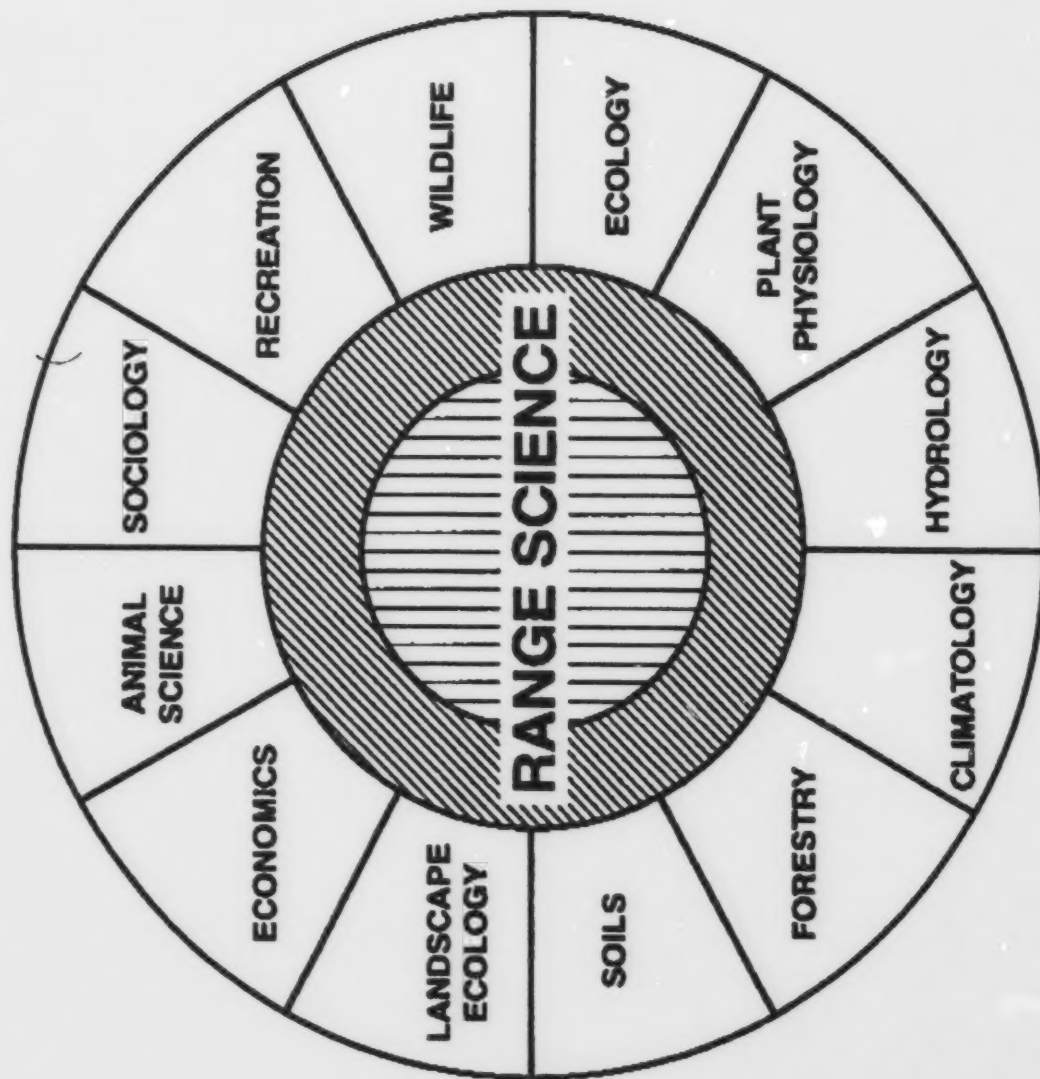
Before management plans are put in place, it will be necessary to develop monitoring systems. This aspect of planning is crucial for determining the progress that is being made toward the goals identified in plans. In light of the fact that this whole issue revolves around management, and management is likely to be further scrutinized, the information from monitoring will be the supporting evidence as to whether the function of ecosystems is improving, holding steady, or deteriorating under the current plan. Presently in very few instances are there objective and quantitative data to support positions on the impacts of management activities -- most allegations and rebuttals are simply emotional evaluations.

Obviously, to make a program like this work, trained and committed range management specialists are needed. Canada is the only country in North America that does not have range management programs in Universities. To add insult to injury, there are so-called underdeveloped countries that have range management curriculums. In short, we must catch up with existing knowledge and technology. We need to insure that professionals are trained and employed to apply range management principles in ways that are best for our Canadian resources within the prevailing socio-economic constraints.

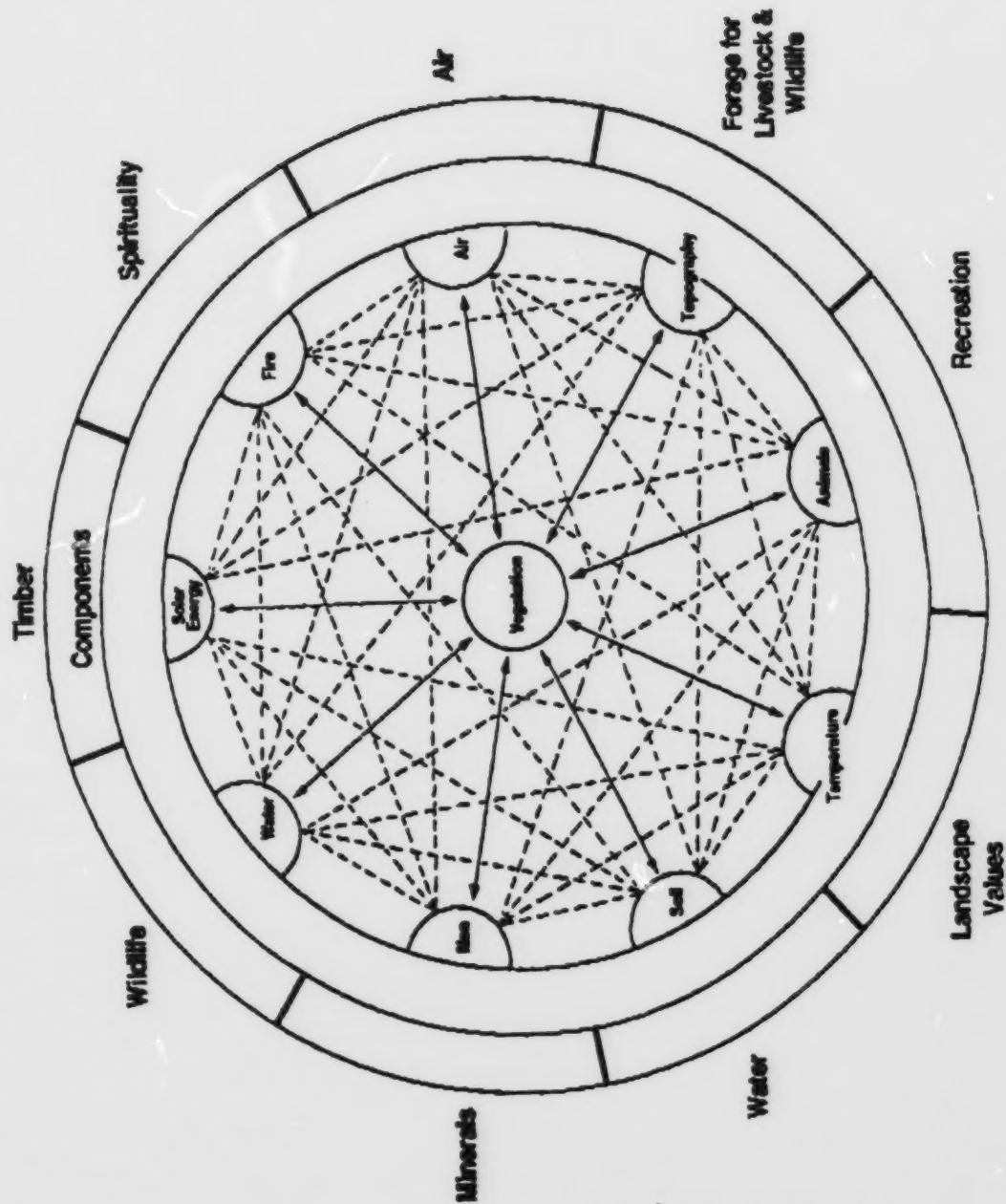
Summary

Compared to other industries that use resources produced on rangeland, the livestock industry operates under the luxury of low regulation by government. My fear is that if we do not voluntarily change our attitudes, ethics, and style of management, use of rangelands may become heavily regulated. Implementing multiple use management will go a long way in preventing this scenario.

What will be needed to get a multiple use range management program off the ground and running? It will require trained professionals, and perhaps most importantly a long term commitment from all of us. Short term programs that lack continuity will not solve the problems. Furthermore, we must demand excellence in management of all rangeland resources on every acre of land. If less than excellence is accepted, we will be challenged to justify every action. Rather than operating under reactive management where others are pointing out flaws, let us develop proactive, multiple use strategies, and lead the way to responsible management of all rangeland resources.



PRODUCTS AND USES OF RANGELAND:



PUTTING THEORY INTO PRACTICE

- **Todd Jorgenson**
Lloydminster, Saskatchewan

Crown Lands

Saskatchewan has approximately 22 million acres of rangeland supporting a substantial number of livestock while providing important habitat for wildlife and serving as important watersheds in some areas. Crown Lands is responsible for the management and administration of about seven million acres of rangeland which provides about 8,000 clients with livestock grazing. Included in this total are 127 grazing co-ops and 56 community pastures. Given this vast amount of public land, one of the main objectives of the branch is to provide and manage this land on a sustainable basis and within a multi-land use perspective.

Although livestock grazing is the primary use made of these rangelands, Crown Lands deal with a wide range of clients who have a vital interest in range resources. Lessees, pasture patrons, oil companies, wildlife agencies, R.M.s, universities, special interest groups and the public at large, all have an interest in how these lands are managed and the policies and programs that guide their use.

To satisfy the many interests, rehabilitate the range and promote good conservation practices, Crown Lands has a priority to cooperate and work with lessees, other users and agencies in the planning and management of public lands. In short, range resource management has been given a higher priority in the last few years and this focus will continue into the future.

Emphasis will be placed in the areas rangeland sustainability and improved resource management as well as extension, not only to direct users of Crown Lands but also private producers. Some of the more specific areas the branch is becoming involved in are:

- (1) development of long-term management plans for community pastures
- (2) monitoring of range production and refinement of stocking rate recommendations
- (3) monitoring of native range condition and trend on an ongoing basis
- (4) applied demonstration and research initiatives to evaluate the potential for low cost range improvement and management techniques
- (5) increasing the amount of technology transfer and extension initiatives through field days, seminars and coordination with other agencies such as extension and the New Pasture and Grazing Technology Project
- (6) providing technical advice to producers and users of rangeland resources
- (7) promotion of responsible multiple use on Crown Land

Resource management has always been an important objective with Crown Lands and with the increasing public voice and concern over environmental sustainability it may be even more important that producers and specialists work together in solving grazing management problems. There are a lot of problems out there but there are also a lot of opportunities for improvement and to educate the public on range and livestock grazing issues.



PUTTING THEORY INTO PRACTICE

- Maurice Blanchette
Vawn, Saskatchewan

We first heard of rotational grazing in January of 1985 at "What's In Stock For You". Following a dismal crop in 1984, and the bleak outlook for grain farming, we were looking for alternatives on our ten quarter farm in northwest Saskatchewan. We were operating a mixed farm, continuous cropping approximately 1,000 acres and running about 60 cows. This spark of interest set by Jerry Holtman led us to Stan Parson's "Ranching for Profit" school in June and a new way of thinking.

We decided to expand our livestock enterprise and make better use of our marginal land base. We sold off our cow herd and purchased calves in the spring and then running them on grass and marketing them as shortkeeps. This led to a very comfortable winter, however, we felt that purchasing calves in the spring and selling in the fall would carry a great risk in the long term. We were buying cattle in one market, and selling them in another market and we were completely at the mercy of the markets. We had other marginal land that would produce forages and so we changed to a different system. We now buy weanling calves in the fall, background them over winter, grass them and have been selling them as shortkeeps. This puts both our selling of cattle and our purchasing of cattle in the same season, and we feel that this reduces the risk of market fluctuation to a degree. If cattle prices are high, we sell at a high price and replace them at a high cost. If cattle are low, we sell low and replace them at a low price.

Our pasture is located on a three quarter section parcel of land, 220 acres of which was pasture and the remainder was in crop production. We felt that we could increase our profits, reduce our inputs, and lower our risk by converting all the land in that parcel into pasture. We felt that we could increase our carrying capacity and at the same time improve our range and rejuvenate old seeded pastures by implementing a "rotational grazing cell". The first thing that we did, and this I would highly recommend, was to obtain an enlargement of the section where our pasture is located from Surveys Branch, Tourism and Renewable Resources, Regina. This photo has proven to be an invaluable tool that we constantly used both in designing the grazing cell and in the daily management of the cell. We started off by separating the native pasture from the seeded pasture as they require different management. We then subdivided these areas into workable units so as to give us in the range of about ten paddocks. We felt that approximately ten paddocks would allow us the flexibility we felt we would like to have to properly manage the range.

Turtle River, which actually is a creek, flows through the pasture and provides us with plenty of clean fresh water. We selected a point on the river where the cattle liked to cross and one where they lay of the land was quite gentle and we designated this point as the center of the pasture. This single watering location serves all of the paddocks except for those on either

side of the center, as the cattle can water at any point along the creek in these two. We made use of alleyways to extend to the farther end of the pasture and built a corral along the alleyway. In this fashion, the cattle have to pass through the corral daily on their way to water, and this makes it easy to handle the animals, and you must remember that we are dealing with a different set each year. We deliver the cattle to the pasture usually very early in May, approximately ten days before the normal grazing season begins in our area. We will use grain to lure the cattle into following the first two or three times we move them, however after this they have learnt that when we move them, the pasture is always better where they are going than where they have been and they quickly follow the truck. We can begin grazing earlier in the spring because we move the cattle fairly rapidly for the first two weeks and do not take the grass too far down. However, the main reason we can start earlier is because of the variety of grass we have seeded. Regar meadow brome is a bunch type of grass that initiates growth as early in the spring in our area as fall rye does. It has a tendency to make a seed head in late May, but after that it will not attempt to head out again, but will simply grow leaves, and given moisture, will grow even in the early fall. We feel that Regar is one of the reasons that we have been able to increase our production to the extent that we have. We seeded five pounds of Regar, and one pound of alfalfa per acre on all of the cropland, and have rejuvenated all of the old stands of seeded pasture, all the while either maintaining or increasing production. Where we used to run 30 cows on 220 acres, we now run 250 steers on 480 acres, 280 of which are seeded and the remaining 200 native prairie and bush. The advantages of rotational grazing are the ability to manage individual areas of the pasture, increase per acre production, reduce brush encroachment, and monitor and control animals.

Electric fencing is the technological tool that has made rotational grazing economically and practically possible. When we constructed the original cell in 1985, we used two strands of high-tensile wire mounted on fibreglass posts interspaced with wooden posts. We now construct new fences using a single strand of high-tensile wire mounted on fibreglass posts spaced every 60 to 80 feet on level ground, and wooden posts only on sharp curves. We also use an alleyway to get from the watering spot to the third quarter and then branch off from there. We found that our paddocks would have been too long and narrow, and besides, we were adding on and did not want to change the old fences. The alleyway is constructed of three strands of wire, center one hot, mounted on wooden posts spaced every 40 to 50 feet. We feel that this fence has proven to be more than adequate for an exterior fence.

One of the greatest problems we have encountered in our pasture over the last few years is bloat. We had absolutely no cases of bloat until 1989, when we suddenly lost eight steers. In some areas of the pasture, the alfalfa germinated very well, to the extent that approximately 75 per cent of the growth is alfalfa, and given certain conditions at certain times of the year, we have incurred losses. We have found that certain procedures reduce the risk; we will not move the cattle early in the morning when there is dew, we make sure the

cattle are full and that it is not raining when they go onto the brome alfalfa. We had not experienced any bloat from 1986 to 1989, however we suffered losses in both 1989 and 1990. We have not been able to determine why we had no bloat the first three years, however we now feed Rumensin mixed with three pounds of barley per animal on a daily basis from the end of May to the end of July. We have also used temporary fencing, that is 16 gauge hi-tensile wire mounted on an insulated reel, that we use to sub-divide paddocks into daily units. This forces the cattle to be less selective by concentrating the cattle on fewer acres. In 1991, we did not have any bloat losses.

One of the most surprising effects of rotational grazing on the range is the damage incurred by brush. The cattle seem to readily browse the brush after mid-June and after several years, we have seen dramatic changes, particularly in western snowberry, or buckbrush. Where, prior to 1985, there was healthy stands of buckbrush three feet high, today, only a small percentage remains. The brush grows from the ground now, and the cattle readily browse this fresh new growth and have trampled the old woody material down to the soil surface. They are also cleaning out undergrowth of poplar bluffs, and take leaves from trees to a height of five to six feet. We found the effects of this type of grazing on the brush quite amazing and have many before and after pictures to document the change.

Following is a chart showing our AUM's per acre:

1982	.59 Aum's per acre
1983	.59 Aum's per acre
1984	.63 Aum's per acre

Implementation of rotational grazing

1985	.89 Aum's per acre
1986	1.1 Aum's per acre
1987	1.44 Aum's per acre
1988	1.33 Aum's per acre
1989	1.25 Aum's per acre
1990	1.35 Aum's per acre
1991	1.67 Aum's per acre

As you can see, there has been an increase in carrying capacity, due in part to newly rejuvenated stands of new and improved varieties and the implementation of, rotational grazing.

There is no doubt that the greatest detriment to rotational grazing is the amount of time required to monitor and move cattle and maintain the electric fences necessary to control the animals. This time cost is somewhat offset by the ease in which any animal health problem may be treated, and also by watching the animals so closely. However, I feel that the benefits greatly outweigh the costs, and we anticipate gradual range improvement over the years.



What's In Stock For You

RANGE PLANNING

Saskatoon, December 10 - 12, 1991

Introduction

The major task of the range manager is to "keep green grass in front of the animals and good regrowth behind them", unfortunately, this is like saying "the major task of the grain farmer is to produce top quality grain and market it at a premium price". First of all, without having a basic understanding of production techniques and agronomic principles it is unlikely that much grain will be produced. Secondly, there seems to be very little anyone can do about the international marketing situation, so essentially the task of marketing at a premium price at least in the short term is mostly out of your control.

In range management, things are similar in that to maintain a rangeland with desirable plant communities and use that range to its potential, a basic knowledge of range plants and their response to the environment is required. Some factors in range management, as in cereal production are also beyond our control like rainfall, or lack of it. Other things such as overgrazing of individual plants is hard to control but far from being beyond our control. Through a good understanding of range ecology and grazing management we can begin to understand the effect of things like drought on rangelands and to then adjust management accordingly

depending on our goals. The real trick in managing rangeland however is to understand the cause - effect relationships or essentially understand the dynamics of rangelands and how they respond to changing environmental conditions, including grazing management. Effective range management involves applied ecology, the interaction of ecosystem components and how management influences them. Desired goals and objectives can be achieved by carefully identifying problems, understanding the cause of these problems, if in fact they are problems and then taking action to correct them.

If changes in management are to produce desired results, there must first be some realistic goals set. I think that setting goals and objectives may be one of the more difficult tasks in range planning. The most important aspect to realize is that we cannot expect too much from the resources and must learn to manage within its limitations, mainly that of climate. If goals are set beyond which the climate and ecosystem will sustain in the long-run, it doesn't matter how well we plan, it will be doomed to failure. As hopefully you can see already, it all comes back to an understanding of range ecology and grazing management.

Inventory and Evaluation

One of the first steps in understanding rangeland and in planning grazing activities is to take stock of the land base. An inventory of rangeland is the most important basic element of a range

management plan and also the most overlooked. Realistic goals can often be identified during the course of taking inventory, problems can be identified as well as possible solutions. Every good range operator knows what resources are available to work with and their potential. Information having a bearing on management practices such as soils, range sites, vegetation, productivity and topography is basic knowledge and should be identified and mapped. This information should be used to compare available forage to livestock needs and to identify any shortfalls. A map gives you a picture of what you have to work with and what you intend to do with it however it is only as good as the information that's on it.

One of the most important aspects when completing the inventory is to identify range sites (different soil, nutrient and moisture regimes supporting plant communities), the range condition of these sites and compare that to the site potential. In other words, by identifying the range site, we have defined, to some degree, the potential plant community in terms of productivity and species composition. We determine range condition of these sites in order to see how the plant community has changed from its potential as a result of past grazing management and environmental conditions.

In short know what plants you have on your range and know what their requirements are for vigorous growth. Plants tell you what kind of range you have and the presence or absence of certain

plants tell what should be done to improve or maintain your range in a productive state. The vegetation that you find out there is always the product of the interactions of environmental conditions and past management.

Assessing the Applicability of Research

I'd like to switch topics here a bit and talk about the applicability of research information and demonstration trials to your own ranching operation or essentially putting theory into practice. First of all it must be realized that we are dealing with a soil, plant, animal complex and that cause - effect relationships are not always straight forward. A classical example is that changes in the plant community and productivity due to improper grazing management are very similar to the effects of drought and vice versa. What this means in terms of evaluating grazing management research is that it is often very hard to say with certainty that a management practice will have similar results elsewhere because of the interaction of the current plant community and the environment with management.

I remember the last "What's In Stock For You" conference I had attended where it was stated that "the amount of forage removed from a plant might be less important than the time and the conditions for regrowth". A little later on in the program it was stated that "because 80 - 90% of regrowth comes from photosynthesis following grazing, it is important to leave leaf area" which at the

time seemed like a contradiction. It was in fact not a contradiction at all because both scenarios could be correct depending on the type of plant you're talking about, its vigor, when it's being grazed and the conditions for regrowth. The very nature of range science makes it difficult to predict cause - effect relationships. In the biological world nothing is ever as straight forward as it seems to be. My advice to producers is that you owe it to yourself to assess results carefully whether they come from research, demonstrations or your neighbour down the road. A great deal can obviously be learned but don't assume that what appears to be working elsewhere will automatically apply to your own situation.

Basic Principles and Concepts

I mentioned earlier that there is a substantial amount of information out there having direct or indirect management implications. Although much new research is required, many of the answers to range management problems are already available. There are a number of basic principles and concepts that have been very well documented including:

1. grazing of forage must be balanced to forage production
2. overgrazing of individual plants causes changes in species composition
3. changes in species composition due to overgrazing result in poorer forage quality and productivity
4. livestock graze selectively and tend to prefer certain areas

over others, for example riparian lowlands over slopes or wooded areas

5. different classes of animals utilize different types of forage
6. grazing at certain times of the year affects plants differently
7. plant vigor is related to carbohydrate reserves, root growth, leaf area and growing conditions
8. the more leaf area is removed the longer it will take a plant to recover
9. total rest for extended periods of time are not necessarily beneficial for plants
10. plants are adapted to grazing both physiologically and morphologically
11. grazing has the potential to increase forage growth and maintain plant vigor
12. larger animals consume more forage

As you can see the list is a lengthy one and I have mentioned just a portion of them. They're all important and all have a bearing on grazing management. So what can we do to better manage our grasslands? How can we apply information? When it comes right down to it there are only a handful of factors that can be manipulated in developing a grazing management system, including:

1. time of grazing
2. frequency of grazing

3. intensity of grazing

The first two points (time and frequency of grazing) will be dependent upon the plant community, key species and growing conditions. Past experience and monitoring of grass growth will tell us when to graze and re-graze plants. More than likely one of the goals of the range plan will be to promote an abundant supply of high producing desirable or key species. This means that we should be managing the timing and frequency of grazing activities to provide for the physiological needs or vigor of these species on the range. This in turn will provide these plants with a competitive advantage over others and hopefully lead to their increase in abundance and productivity. It has been recommended that overall utilization of key species should also be dependent on range condition (table 1.) This is because the vigor of these plants generally declines as range condition declines. One other determining factor here is that current growing conditions, play a dominant role in how these plants will respond to grazing. Monitoring of rangelands must be incorporated into any range management plan because of this.

Table 1. Use of Key Species in Relation to Range Condition

<u>Range Condition</u>	<u>Level of Use of Key Species</u>
good to excellent	about 50%
fair	30 to 40%
poor	10 to 30%
very poor	0 to 10%

I mentioned before that cause - effect relationships are hard to predict. This fact constitutes the "art" in range management and what makes it challenging. Because prediction is often difficult when dealing with range ecosystems, and we have little control over moisture or growing conditions, monitoring becomes a very important step in the implementation of any grazing management plan.

I don't want to dwell on monitoring other than to say that it is done to find out what's happening over time and how management practices are affecting the plant community. It is a means to see if adjustments or changes in management are required. There is both short term monitoring such as that to assess plant growth and long-term monitoring such as assessing changes in species composition. Monitoring typically involves more than just a look out the window of a half ton to be effective. It should focus on such things as abundance of key species, utilization measurements, and vigor observations such as leaf length and width. Key areas should be selected for monitoring that are sensitive to change such as riparian lowlands, or other primary grazing areas. Fig. 1 gives an example of some monitoring of the use of key species and identification of key areas.

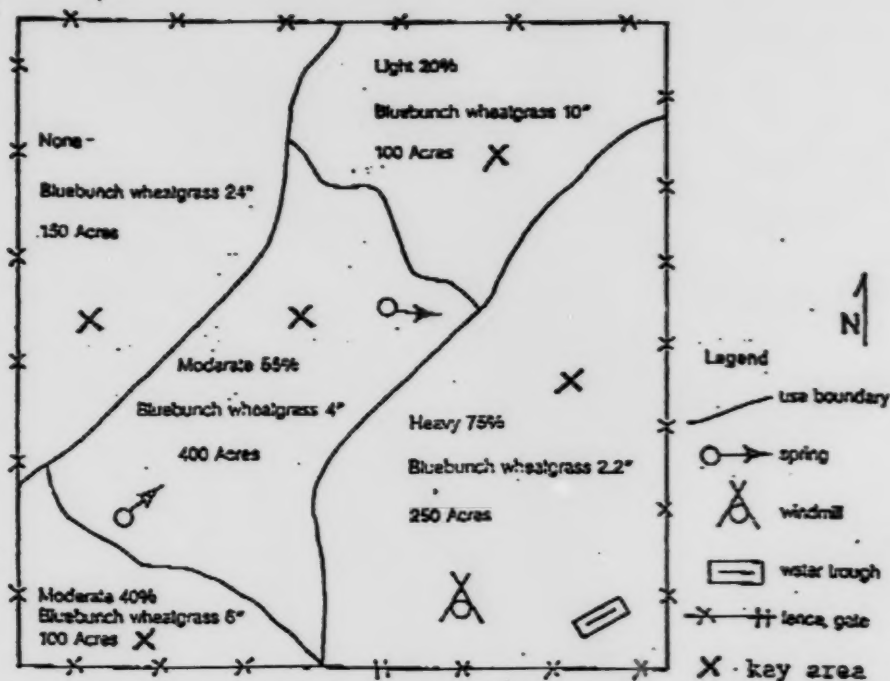


Figure 1.

"Use map" of a 1,000-acre pasture showing use estimates on the key species, stubble height and approximate size of each use zone.

The third point I mentioned that can be manipulated when developing a grazing management system is the intensity of grazing. The idea of grazing intensity has received a lot of attention in the last while. It is well documented that livestock graze selectively. They graze and re-graze plants in preferred plant communities or habitats while avoiding others. As a result, many range management objectives include reducing this selectivity, improving distribution and reducing overgrazing of individual plants in preferred sites. Management methods typically used are locating water and salt in under-utilized areas, fertilization and burning to draw animals into an area, herding, crossfencing and grazing systems. All these methods help to reduce overgrazing and improve distribution however there is still a problem of plants being

grazed over and over. When an increase in livestock density is used in conjunction with these methods, the potential to reduce overgrazing of plants and improve distribution is much higher. This is related mainly to a decrease in time a herd will spend in any one paddock or area and also the length of rest plants will receive.

If a larger pasture is subdivided in a way that dissimilar vegetation types, are separated, livestock distribution will tend to be improved. In other words the more variety of habitats or plant communities that exist in a paddock the more likely animals will concentrate on some and avoid others. Overgrazing of primary areas is likely to occur. Range Managers generally recommend fencing off of different vegetation types or range sites for this reason and managing each unit separate from others. This may or may not always be possible as most pastures have a variety of soils, terrain and plant types, however, regardless of the distribution of range sites and vegetation types within each field, an increase in stocking density will have a number of effects, all dependent on forage availability and the actual livestock density:

1. competition for forage will increase under high density resulting in more even use
2. forage selectivity will decrease
3. distribution will improve
4. the grazing period will need to be shortened in each paddock

thus decreasing the chance of repeated grazing of plants

5. more control is gained over the rest period plants receive and this rest can be more easily tuned to growing conditions

The above points deserve a little more attention mainly from the viewpoint of the intensity of management required. Increasing livestock density and the number of paddocks obviously has some beneficial results but also some drawbacks, the main ones being the expenditure of time, energy and funds. Some producers are prepared to make a commitment to this system of management, but I think a lot are not. The cost of this practice is an increased level of management in terms of capital investments, time and knowledge. An intensive management system of this nature may or may not work for you. Consider your overall goals and objectives, your present range condition and how past management has worked for you and the range. Large numbers of paddocks and high livestock density are very effective management tools, however there are alternatives to this type of management. Don't write off the more traditional methods such as deferred, complimentary and rest rotation grazing systems. These systems may not have a livestock density which results in animals competing for forage, but they have been shown to be very effective, workable systems when tailored to fit a specific rangeland and its vegetation.

Summary

It should be apparant that range management is more than just

livestock, fences, water and grass. It involves applied ecology and understanding the effects of grazing management on plants, soils and animals. It may take a little more time and energy in mapping, evaluating and monitoring your rangeland resources but soils and plants are the bread and butter of any ranching operation. Although animals are the marketable end product, any grazing management plan should focus on plants and the processes required to produce abundant vigorous forage.

An overall goal for all ranchers would be to maximize the return from the use of the range while improving or maintaining the range indefinitely. Setting more specific goals will depend on the specifics of each ranch or pasture, it's soils, plants, condition and past management as well as individual aspirations.

An inventory of your pasture will help in making management decisions and in setting realistic objectives. Generally increasing animal production is a common goal, but it should be remembered that soils and plants are required to support livestock and not vice versa. Claims of certain grazing methods that can increase stocking rates two or three-fold should be viewed with caution. Climate and growing conditions are still the dominate factors controlling productivity, however, grazing management and planning can help managers to increase productivity and be better prepared rather than respond to unplanned circumstances such as

drought.

I've found that the inventory process is the most important basic element of range planning together with setting realistic goals and objectives, and one producer's sometimes have the most difficulty with. I think a key to successful range planning is continued education and learning but I also think the real challenge comes in actually applying the information and techniques that are out there. Working together with specialists in assessing your rangeland is an important component in range planning extension and technology transfer. No two rangelands are the same and there is no universal prescription for improvement. Producers should use the available resource people that are around the province. There is a substantial amount of information out there, almost overwhelming, but it must be more effectively applied and tailored to each specific situation.

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PANEL - WHAT'S HAPPENING IN SASKATCHEWAN

- Duane McCartney - Agriculture Canada
Melfort, Saskatchewan

The Melfort Research Station has had a long history of Forage and Grazing Research. In 1974, a joint research project was established between Agriculture Canada, Saskatchewan Agriculture Lands Branch, Saskatchewan Agriculture Livestock Branch and the Horned Cattle Trust Fund to conduct long term beef cow/calf and northern bush pasture management research. The project involves 300 crossbred beef cows and calves and 1,000 acres of roughland pasture. Over the years, the project has evolved into one of Canada's largest, with co-operation and additional joint ventures with Western College of Veterinary Medicine, Veterinary Infectious Disease Organization, Saskatchewan Research Council and Agriculture Development Fund. The results from this research are applicable to the entire northern area of western Canada contained in the Aspen Parkland belt.

The following is a list of the various areas of past and current research. Detailed reports are outlined in the annual Melfort Research Station Highlights Publication:

- Evaluation of rotational grazing, annual fertilizer application and reseeding of grasses and legumes on northern bush pastures.
- Fertility levels for northern bush pastures.
- Brush control management using a roller application to apply herbicides.
- Sod seeding as a means of introducing a legume into a depleted pasture.
- Evaluation of savory grazing as a means of extending the grazing season.
- Forage variety evaluation using actual and simulated grazing.
- Remote sensing for range and pasture management.
- Winter cow/calf nutritional management studies.
- Calf scour management research.
- Straw based rations for wintering beef cows.
- Relationship between energy and cow reproduction in wintering beef cows.
- Vaccine efficacy testing for respiratory disease in beef calves.
- Epidemiology of intestinal parasites in beef cattle.

- Spring seeded winter annuals for late fall grazing.
- Storage management for round bale silage.
- Alternatives for late fall, early winter and early spring grazing.
- Alternative silage crops.

In addition to the forage/beef program, Dr. Russ Horton, Forage Agronomist and Range Management scientist and recently hired Ms. Heather Loeppky, Forage Weed Ecologist, are initiating research programs in their respective areas.

- Fertility requirements for grass and legume seed production.
- Weed management for establishing grass, legume and native grass.
- Forage variety evaluation for hay and grazing.
- Harvest management for optimizing hay production.
- Grass/legume mixtures for optimum production.

The Melfort and Swift Current Research Stations and the University have recently formed the Saskatchewan Beef/Forage Research Group for co-ordinated cow/calf research in Saskatchewan. The group will concentrate on grazing systems, reproduction efficiencies, late fall grazing of alternative crops and evaluation of new forages. In addition, the Melfort Research Station will concentrate in the future on a holistic multi-disciplinary research team approach to evaluate different farming systems for the black and gray wooded soils of Saskatchewan.

PANEL - WHAT'S HAPPENING IN SASKATCHEWAN

- **Neal Holt - Agriculture Canada**
Swift Current, Saskatchewan

Agriculture Canada's research mandate is one of conducting and supporting long-term strategic research for the development and future competitiveness of the sector. It will form partnerships with industry sectors to help create market orientation. It will also focus on value added to agriculture products.

The national goals for forage crop research area:

1. To increase the value of forages in animal production through research in plant breeding, agronomy, animal nutrition, harvesting and preservation.
2. Improve the marketability of forages and forage derived products through innovative processing and preservation research. At Swift Current, four scientists and twelve support staff work within these national objectives to provide forage crops research for the dryland prairie area.

The specific objectives of the Swift Current programs are: breeding of grasses for dryland use; drought and saline stress physiology; forage management for problem soils (drought, salinity, soil erosion); management of improved dryland pastures; evaluation of nutritive value of forages and integration of breeding, production and utilization information into a bioeconomic model of beef production.

Paul Jefferson concentrates on breeding and physiology of forage grasses. He is studying seedling growth in Russian and Altai wildrye to better understand seedling vigour. Genetic studies include variability and inheritance of grass tetany or hypomagnesia syndrome in Russian wildrye; variation in seedling traits in Russian and Altai wildrye; expression of creeping-rootedness in alfalfa as affected by plant density; and variability among alfalfa varieties and locations for flood irrigated heavy clay soil sites. In the area of physiology, a four year field study has demonstrated that blue Altai wildrye breeding lines have higher leaf surface wax, seed yield, seed weight and germination than green lines. Research in dryland crop physiology will assist plant breeders in selecting for drought-adapted crops.

John Waddington's research interests concern forage and other species establishment and water relations in established stands. He is examining the response of seedlings to variations in soil moisture and the relationship to seedling survival. One part of this work is efforts to establish alfalfa with direct seeding into spray-out strips in established grass. His research also includes the introduction, observation and assessment of potentially useful plants for grazing, for saline areas and for windbreaks. With Harold Steppuhn, John is collecting data on the effects of grass windbreaks and saline soils on forage production.

The objective of the research of Jerry Knipfel is to assess the nutritive value of common forages, opportunity feeds and new forage cultivars. These forages are evaluated with rapid laboratory methods including wet chemistry, in vitro methods and near infrared spectroscopy. The results are related to data collected in feeding trials. Jerry is especially interested in feed fibre components and how they affect digestibility and intake. Ultimately, these data will be incorporated into a bioeconomic model of beef production.

My role is to evaluate different forages and management practices using the grazing animal. Historically, this research involved the assessment of introduced grasses and legumes, especially Russian wildrye and alfalfa. Now, more emphasis is being placed on different exotic and native grasses for season long grazing. Steers are being used to measure the potential of annual crops in grazing systems. There are also grazing studies to assess the value of Russian wildrye seed culms for snow trapping and other practices to optimize water and nutrient use. Forage intake is being measured in two studies and grazing behaviour is being observed.

Range Management Research at the University of Saskatchewan

Submitted by:

J.T. Romo, Associate Professor-Range Ecology
Department of Crop Science and Plant Ecology
University of Saskatchewan, Saskatoon, Saskatchewan

Range management research at the University of Saskatchewan is directed toward the many resources of rangeland ecosystems. Research projects are diverse and all are conducted with the intention of developing sustainable and multiple use strategies on rangeland. Ongoing studies include the ecology of wooded draws or riparian zones in southern Saskatchewan, population ecology of pasture sage following sward disturbances, regrowth of northern wheatgrass and winterfat under several defoliation regimes, crown temperatures-sward characteristics in native grasslands, rest requirements for smooth brome and crested wheatgrass following several initial dates of defoliation, wolf plant effects on growth and productivity of subordinate plants in crested wheatgrass, genetic control of wolf plant characteristics in crested wheatgrass, ecology of exotic grasses in native grasslands, and musk-ox grazing impacts on sedge meadows on Banks Island, N.W.T.

PANEL - WHAT'S HAPPENING IN SASKATCHEWAN

- **Faisal Taha - Saskatchewan Stock Growers Association
Regina, Saskatchewan**

Grazing and Pasture Technology Program

The Program has been developed in response to the immediate need for improved management and development of Saskatchewan rangelands. This program and related programs will significantly contribute to the sustainability, productivity and profitability of rangeland resources by providing the private stockman and the public-at-large with a real opportunity to cooperatively plan for range use and management.

The Program

The Saskatchewan Stock Growers Association (SSGA) and the Agriculture Development Fund (ADF) have signed a contract aimed at improving the management and development of the rangeland resources in the Province. Specifically, the program calls for:

1. Organization of a province-wide educational program that emphasizes rangelands as a resource.
2. Provision of technical advice to producers and users of rangeland resources.
3. Demonstration of some feasible range management and improvement practices that contribute to sustainability of productivity.
4. Promotion of multiple range uses for livestock, wildlife, water yield, recreation, environmental beauty, and aesthetics.
5. Convening of a provincial conference on management and improvement of rangelands in Saskatchewan and the prairie steppes.
6. Training of interested and involved parties in management of rangeland resources.

The Participants

A Steering Committee, made up from the Saskatchewan Stock Growers Association (SSGA), Forage Council, Agriculture Development Fund (ADF), Extension, and Agriculture and Food has been appointed as a governing body to oversee the implementation of the program.

All producers and user groups of the rangeland resources will have direct access to Program's staff for professional advice and technical assistance.

The Project Organization

The Headquarters is in Regina, at the Exhibition Grounds, in the Canada Center Building. Four regional offices have been established at Swift Current, Unity, Kamsack and Weyburn. The staff heading these regional offices are Dr. Thomas Dill, Mona Lee Kirkland, Wally Vanin and David Shortt, respectively. Dr. Faisal Taha, Program Manager, is stationed in Regina.

PANEL - WHAT'S HAPPENING IN SASKATCHEWAN

- **Perry Grilz - Ducks Unlimited**
Saskatoon, Saskatchewan

Prairie Care - A Multiple Land Use Plan

Saskatchewan supports nearly one-third of the continental breeding mallard populations and plays an important role in the maintenance of this species, as well as other species of waterfowl. At present, the mallard population in Saskatchewan is 31 per cent below the average and is at the lowest level in 32 years. Populations are declining at an annual rate of 12 per cent and are currently below one million birds from historic highs of over five million birds.

The cause of this drastic decline in the duck population has too often been blamed on the drought of the 80s. But an increasing proportion of the wetlands and uplands used by breeding ducks as recently as the 1970s exist no more. Changes in agricultural practices and a poor farm economy have forced prairie farmers to put every possible acre of land into production. Never before have waterfowl faced the combination of widespread drought and modern, intensive agriculture.

Recently rising production costs, concern for soil degradation and stiff international market competition for beef and grain, have combined to create a change in philosophy for hundreds of concerned prairie farmers and ranchers. They realize that traditional land use practices cannot continue indefinitely. Many would prefer to concentrate production efforts on their higher quality lands, while converting poorer land to less intensive agricultural use. However, a switch to more conservation friendly farming practices is impeded by existing economic conditions and policies influencing land use.

Incentives are now available to producers who want to adopt more conservation - friendly farming practices through Prairie CARE, Prairie CARE (Conservation of Agriculture, Resources and the Environment) is a major component of an overall strategy offered under the North American Waterfowl Management Plan, and delivered on behalf of the Plan's partners, Ducks Unlimited Canada. The Prairie CARE program has been set up to encourage changes in the management of agricultural lands which will benefit both the needs of the producer and wildlife. As a multiple land use plan, Prairie CARE is involved in two areas of the forage industry where multiple land use is the goal.

Delayed Hay Cut

Upland nesting waterfowl are attracted to the cover provided by hayfields. However, many of the nests and hens are lost during normal haying operations. Nesting success can be improved by delaying the hay cut operation. Biologists feel that by delaying the haying operation until mid-July, it can significantly improve nesting success for waterfowl. With a delay in the hay cut, producers are faced with a loss in feed value. Therefore, Prairie CARE offers producers a monetary compensation based on this forage value loss.

Producers who want to take cultivated land out of production and seed it to forages for hay production can receive up to \$20.00/acre from the Prairie CARE Program. In addition, Prairie CARE staff provide technical assistance in recommending a hay mixture which is best suited to the site and the delayed hay cut operation.

Planned Grazing Systems

In Saskatchewan, rangelands are a major land use type and are an important resource for livestock production, water, recreation and wildlife. However, there has been a high cost in lost production, damaged watersheds, reduced soil organic matter and lost wildlife habitat because of rangeland misuse.

In order to restore long term rangeland productivity, we need to first have an understanding of the Soil-Plant-Animal Complex. Then, through the process of rangeland planning, planned grazing systems can be developed and implemented. This ecologically based grazing management will improve range condition and productivity, providing significant benefits for both livestock and wildlife.

Prairie CARE offers both technical and financial assistance to producers to set up and practice planned grazing management. Prairie CARE staff work with the producer to develop a grazing plan that will be acceptable to the needs and goals of both parties. Every plan developed is specific to the land base and producer.

Planned Grazing Management goes one step beyond traditional grazing systems that look at managing the range solely for beef production. In a planned grazing system, the range resource is balanced with the biological needs of both livestock and nesting waterfowl. For example, waterfowl are sensitive to disturbances from grazing livestock during the nesting period. Therefore, areas that are important for nesting are fenced separately and are deferred from grazing until after the nesting period. Another aspect considered is the need for adequate carryover on prime nesting areas to provide nesting cover the following year.

It is through multiple land use programs like Delayed Hay Cut and Planned Grazing Systems, in addition to other programs such as Land Leasing and Purchasing, that large changes can be made in moving towards good land stewardship. These changes will help both the rural economy and waterfowl production in Saskatchewan.

**RANGE MANAGEMENT AND FORAGE ACTIVITIES
of the
SASKATCHEWAN SOIL CONSERVATION ASSOCIATION**

**Presented by
Nancy E. Fraser
Soil Conservation Specialist**

at

**WHAT'S IN STOCK FOR YOU
December 11, 1992**

The Saskatchewan Soil Conservation Association (SSCA) is a non-profit, producer-based organization dedicated to the promotion of soil conservation in Saskatchewan. It was formed in 1987 by a group of producers who saw a need to increase the public awareness of conservation and to share soil conservation information with others. Today, a network has evolved to give producers strong peer and professional support as they move toward a greater adoption of soil conservation practice.

The SSCA has 12 position statements, however the one most applicable to today's discussions is: **THE SSCA BELIEVES THAT WETLANDS, RANGELAND, WILDLIFE HABITAT AND AGRICULTURE ARE ALL VALUED USES OF OUR LAND RESOURCE. MANAGEMENT OF THESE USES MUST HAVE A COOPERATIVE AND INTEGRATED APPROACH.**

In 1989, the Board of Directors signed a contract with the ADF to provide an **EXTENSION, EDUCATION AND AWARENESS PROGRAM** to complement the Save Our Soils (SOS) Program and strengthen Saskatchewan's soil conservation effort.

Under the ADF contract 11 professional staff were hired. Six are in regional offices and 4 are in our central office in Regina. The Regional Conservationists function as part of a Regional Conservation Team to assist in developing, promoting, and implementing the Regions Conservation Plan. The Cental Specialists work in their area of specialization (Range Management and Forages, Economics, Shelterbelts, and Communications) to produce soil conservation public relations, education and awareness programs targeted to producers, the general public and school children. We all function as part of a team to enhance uptake of the Save Our Soils (SOS) Program and actively support and strengthen Saskatchewan's soil conservation effort by cooperating with other conservation agencies and programs.

Because our mandate is extension, education and awareness, the SSCA does not administer any forage or range management programs directly, but rather provides technical, extension and organizational support to existing efforts. The SSCA also actively encourages programs where there is an identified need and interest.

Activities:

1. SOS Program.

The SOS Program is a component of the three year Canada-Saskatchewan Agreement on Soil Conservation. It is implemented jointly by PFRA and Saskatchewan Agriculture and Food through the Agricultural Development Fund. On-farm demonstrations are a big part of the program. Producers can receive technical, material and financial assistance to try soil conservation practices which are new to them. The forage options have been a popular part of the program. Assistance is available to establish perennial forage on erodible or saline land, grass waterways, and establish grass barrier strips. Funds are administered through local ADD Boards and assistance varies with the ADD Board.

Staff of the SSCA is available as resource people for field days, tours, training sessions and individual consultations to assist in the implementation of the SOS Program and demonstrations.

2. Permanent Cover Program (PCP) and PCP II

The intent is to encourage producers to grow perennial forages and trees on erodible or marginal land where annual cultivation is causing soil degradation. To ensure that converted lands stay in forage for an extended period of time, the program requires that eligible applicants enter into long-term (10 to 21 year) contracts. These programs complement the SOS Program and are entirely administered and funded by the PFRA. Details and applications are available from PFRA offices.

3. The SSCA cooperated in producing three forage booklets designed to provide technical advice to producers. "Forage Selection, Forage Establishment and Forage Management" are available from the cooperating groups or Rural Service Centres.

4. The SSCA will be releasing a second "How To: Conservation on Your Own" video which contains segments on direct seeding, establishing forages on saline and erodible land and how soil conservation can benefit habitat. Contact our offices in February for details.

5. Our SW region is cooperating in establishing forage demonstration plots. Several varieties will be seeded at various locations throughout the region. Contact our Swift Current Office for information.

6. We are sponsoring and HRM in practice course February 27 - 29, 1992 in cooperation with the Grazing and Pasture Technologies Program.

7. The SSCA is continually seeking ways to cooperate with other agencies and groups to promote soil conservation. We have organized and will continue to provide opportunities for joint conferences, resource management training courses and extension meetings and extension publications.

PANEL - WHAT'S HAPPENING IN SASKATCHEWAN

- **George Chu - PFRA
Regina, Saskatchewan**

The PFRA Community Pasture Program is one of the first and also the largest federal land use conservation program in support of sustainable prairie agriculture production, primarily, the beef industry in Western Canada.

The federal Community Pasture Program operates 87 community pastures across the Prairies. 62 community pastures are located here in Saskatchewan, 24 in Manitoba and one in Alberta.

The total pasture area encompasses approximately 2.2 million acres of improved and natural rangeland in Western Canada.

The main objectives of the PFRA Community Pasture Program are:

1. To facilitate the conversion of cultivated marginal land to permanent vegetation cover.
2. To maintain and improve native rangeland vegetation from the ecological perspective.
3. To encourage improved cattle herds by offering a breeding service of high quality purebred bulls to pasture patrons.

The PFRA Community Pasture Program delivers service to approximately 4,000 Prairie farmers and ranchers by providing seasonal livestock grazing and breeding services to about 214,000 head of cattle annually on lands that are marginal for cereal crop production.

All PFRA Community Pastures are managed so as to provide sustainable season-long livestock grazing based on an integrated livestock/forage based management system. Pasture condition trends are monitored and indications of over and under utilization are identified. This information is used to adjust seasonal stocking rates based on the pasture carrying capacity, seasonal growing conditions and stockwater availability.



MARKETING STRATEGY

- Brenda Scheideman - Livestock Communication and Consulting
Stony Plain, Alberta

Livestock Marketing Strategies

Today I challenge you to see beyond the boundaries of your farm and to look at the beef cattle industry with vision. It is through your understanding of the entire livestock industry and your acceptance of responsibility for its future, that we will experience change in our current livestock marketing strategies.

Each aspect of the livestock industry is an important link in the production chain. All of it is affected if just one part lacks vision. Consumers will not buy beef if processors do not change to satisfy their needs. Processors will not buy beef from packers that do not have carcasses that meet their requirements. Packers will bid low on slaughter cattle that do not fit the box and meet the demand of processor and consumer. Therefore, feedlots cannot bid on cattle that the packer does not want.

The first step in your marketing strategy becomes the act of seeking out knowledge on every aspect of the beef cattle industry. Only you can guarantee a success in your operation and that success may depend on your appreciation of the whole picture. "If there is one thing that we, as cow calf producers lack, it is the knowledge of how the rest of the industry works once they have our calf." That statement made by an Alberta farmer, reflects the need for your participation. What it says is - it is my responsibility, as producer and owner of these cattle, to know everything there is to know about them. I must question their potential until I understand how they perform at home, in the feedlot, on the rail, in the box, on the shelf and on the table.

The market price that you receive for your feeder cattle will depend greatly on your knowledge of the industry. First, have an objective look at what you are trying to sell. Like a toddler, this first step is may be your weakest. In our hearts, we all want to believe that we have the "best" calves. A true evaluation may reveal that what appears "best" to us is outdated or undesirable in the marketplace.

Strive to know the amount of cattle for sale, the sex, weight, breed, frame size and condition. In a study of 142,000 feeder cattle by Kansas State University, crossbred and large frame cattle brought \$5.00 cwt. more than straightbred or medium frame cattle. Small frame cattle and those with horns, testicles or tag were discounted up to \$10.00 cwt. In addition, load lots of forty or more were paid a premium over smaller lots. These same principles apply in Western Canadian herds as well. There is a wide variety of prices paid in each weight range according to quality - sex, frame size, breed, color, quantity, condition, uniformity, cleanliness and background (preimmunized, weaned, etc.).

There is a floor and a ceiling to every market and it is your responsibility to know what those perimeters are and when they occur. The activity in a marketplace at any given time is based on supply and demand. Short supply could result from a number of factors. Cow numbers, time of year (such as mid summer), long feed supplies, export activity or holding for reasons of speculation. Strong demand could be a direct result of short supply, reduced cost of production, interference or pure short term speculation, but it is driven more so by the potential sale of the finished product, or the end market. By staying in tune with the market prices, projections and speculative theories throughout the entire beef chain, you can fine tune your production and marketing energies for the product and the time that would be of the most benefit to you.

If your feeder cattle are continually selling at a discount, you have to ask yourself, why? Is it the breed, color, weight range (certain ranges do not sell well at certain times of the year), frame size? Are they too thin, too fat, too dirty or too tired at sale time? More importantly, are your calves uniform in size, condition and quality and if not, are they packaged accordingly? Did you do anything to enhance the product - are they dehorned, castrated, preimmunized, weaned or creepfed? If not, why not? Cattle dehorned after arrival in the feedlot have an eight per cent reduction in average daily gain (ADG) over 92 days, and those castrated after arrival in the feedlot will suffer a five per cent reduction in ADG over 92 days (Farming for the Future 1989). This indicates that the discounts in the marketplace on horned and intact cattle are justified. On the other hand, calves that are weaned for thirty days or more will weigh two per cent more than those unweaned (Cole et al 1985) and those that have access to limit creep feeding for thirty to sixty days prior to weaning will weigh two per cent more and have 20 per cent less death and 40 per cent less sickness in the feedlot (Cole et al 1985).

Positive results happen from a positive attitude. If, after taking steps to improve the marketability of your cattle, you are still achieving unsatisfactory sales, perhaps it is your attitude that needs an overhaul. Favourite terms producers use at sale time are "I got rid of my calves on Monday" or "I am going to dump my calves on Friday". Livestock buyers receive calls from producers from any distance, and they start by saying "I am hauling my calves tomorrow. Come bid on them today." When you sell cattle, why make it sound like you are taking out the trash? There are not any benefits to "dumping" cattle into the system. Careful consideration must be given to the care and handling of your livestock and the way in which they are presented prior to the sale date. Cattle should be packaged at home in a familiar environment regardless of how you choose to sell them.

Selling Your Cattle

Although there is a keen desire among the producers of feeder cattle to learn more about the economic advantages of different markets, those same producers suffer a severe lack of vision when it comes to the handling and care of livestock. I am driven to ask - when will we start to practise basic animal care?

Everything we do, every movement, every change, every noise induces stress on our cattle. When we take young unweaned calves and expose them to several different environments for extended periods of time, we cause them a tremendous degree of stress. This shows up later in terms of morbidity and mortality in the feedlot. And what does it cost? Hutcheson & Cole (1986) found a 29 per cent decrease in weight gain and 11 per cent less feed intake in morbid calves in eighteen groups over fifty six days. Morbidity shows up primarily as respiratory disease, a cost to the U.S. cattle feeding industry of \$500 million per year. In Alberta trials, a 55.9 per cent reduction in weight gain in morbid calves over a sixty day period resulted in costs per head for morbidity alone to exceed \$17.60 (Basarab & Stafford 1991). Average estimates of cost to the Alberta cattlemen to handle stressed calves exceed \$25 million and this year our average estimated cost to doctor 550 lb. calves will hover just over \$18.00 per head with an additional \$9.00 per head cost of mortality (Canfax 1991). Morbidity and mortality costs may reach over \$37 million dollars in the province that carries fifty per cent of the nation's beef herd and professes to be on the leading edge of livestock technology and care.

Is this sad state of affairs due to our management skills, lack of funds in pharmaceutical research, transportation system or weather patterns? No! It is due to controllable stresses to which we expose those calves. It is because producers will not wean and do not know how to sell cattle. It is because too many feedlots put too much emphasis on fast numbers and it is too easy for order buyers to sit on a bench all afternoon without ever having to get out in the country and support a system that is in dire need of change!

The producer of feeder cattle is greatly affected by all that happens to his animal during the process of marketing. His profit or loss is often more dependent on how the cattle are handled rather than the initial price that he received. The saleable pounds of livestock will be directly related to the percentage of shrinkage those cattle suffer.

Shrink is the weight an animal loses whenever it is exposed to any type of stress. There are two kinds. Excretory shrink is the loss of the contents of the belly and digestive track. This is usually in the form of urine and manure. Excretory shrink begins immediately and is easily recovered once the animal is placed back on feed and water.

Tissue shrinkage occurs when the animal becomes dehydrated and starts to pull moisture out of his muscle tissue to feed his internal organs. There is no documented research that indicates when excretory shrink ends and tissue shrinkage begins, but it is now felt that they start occurring at the same time (Cole 1991). Tissue shrinkage is a serious physiological insult to the system and calves may take up to thirty six days (University of Alberta 1973) to recover initial weight but most will average between fourteen (Cole et al 1989) and twenty six days (University of Alberta 1973) to recover from shrinkage.

Young, unweaned calves will shrink (lose weight) at a faster rate than young weaned calves. As the age of the calf and the time on feed increases, the rate of shrinkage decreases under the same conditions and finished cattle will shrink the least. The time of the day is a factor as cattle weigh two per cent less in the morning than they do in the afternoon, this is a natural occurrence. The type of feed the animal is on can influence the rate of shrinkage as lush green feeds will pass through the digestive system faster than dry course hay. The weather plays a role and unfortunately many cattle are worked in poor weather because of other farming obligations. Cold weather will not affect cattle as much as will extreme hot weather. But any weather condition will be an adversary if cattle are run and heated and then expected to stand without protection.

The greatest influence to shrinkage is the amount of time the animal must fast and stand in a strange environment. Fasting accounts for 66 per cent of the total shrinkage (Cole et al 1987), (Von Tungeln 1986), while handling and standing account for the majority of the remainder. Transportation does not have as great an effect as does handling (Phillips et al 1987), in fact the longer truck ride did not contribute to increased shrinkage or morbidity and mortality (Cole et al 1988).

Cattle shrink rapidly when first handled and a lot of the initial shrinkage occurs at home. Many researchers believe that proper handling in the first four hours and then again after arrival at the point of sale will decrease the degree of shrinkage suffered. It is up to the producer to work cattle in adequate handling and loading facilities and to provide them with feed and water at all times. For best results through travel, feed the cattle medium quality hay, do not promote rich feed, excessive water, salt or concentrate to the cattle prior to loading. To reduce the stress of being handled, open the corral for a period of time prior to when the cattle are worked so they become accustomed to the facility. Choose a day that is warm and dry, tie up the dogs, leave the motor bikes at home and plan to spend the day working through the cattle in a quiet and controlled manner.

The mixing of groups of cattle, especially young unweaned calves, is a great physiological and psychological stress to the them. Each time cattle are mixed, they will jockey for position in the pen. You may have observed that cattle circle for several hours (even days) after mixing. They are walking off an emotional crisis and are trying to reestablish order and dominance. If feed and water is not available to them at this time the impact of the mixing is severe. There is evidence to support that mixing of cattle will double the shrinkage that would normally occur (Cole 1991). Crowded cattle that cannot find sufficient room to rest will suffer increased shrinkage of 16 to 25 per cent (University of Alberta 1973). For every 1 per cent of shrink over 4.7, morbidity increased by an additional 25 per cent (University of Alberta 1973).

How much will your cattle shrink? Cattle will lose a minimum of 5.9 per cent of their body weight on an overnight stand alone (Phillips 1989), this amount will increase to eight per cent (Brownson 1976) if they stand in a strange pen or are on loose feed. Calves commonly lose close to 11 per cent of their body weight from the time of weaning through transport (Phillips et al 1987) (Von Tungeln 1986). Alberta figures show that the average expected loss in traditionally marketed calves with an overnight stand is between 12 and 15 percent of preweaning weight (University of Alberta 1973) (Young 1973).

How much is this costing you? If your 600 lb. steer calf shrinks six per cent and the going price is \$100.00 cwt. you will be \$36.00 short on your net return. If he shrinks 12 per cent then your net home will be \$72.00 less. There is a direct economic advantage to you when shrinkage is reduced and a health and economic saving to the industry. Why would you not take steps to reduce shrinkage and market your cattle in a safe and responsible manner?

Shrinkage is a condition of sale, as are freight, commission and other costs that influence the net return. It is these conditions that often far outweigh the impact of price to net return. One of our great faults is that we are price driven, without realizing the impact of the other costs to the net return and without regard for the well being of the cattle.

A pencil shrink may apply to compensate for gut fill or tag. The standard pencil shrinkage is four per cent. Pencil shrink should not be applied after extensive travel or an overnight stand. Carefully calculate the impact of all the conditions of sale prior to making a marketing decision.

Options for marketing can be broken into six areas - auction markets, farm gate sales, special sales, forward contract, niche markets and retained ownership.

In the auction mart sale the house becomes the representative for the cattle. For this service, a commission applies and all sales are FOB the auction. Generally, cattle are brought in the day before they are sold. Therefore, all the cattle stand overnight, often without feed and water. The auction is quick and convenient for the producer because he has no responsibility and a variety of buyers are usually on hand. The owner of the cattle forfeits any measure of control once the cattle arrive at the auction. It is up to the producer to be aware of price trends and spreads prior to consigning his cattle. This type of environment is stressful to cattle because they are standing, fasting and being handled in a foreign environment. Initial shrinkage will be rapid and severe in a traditional auction mart sale and because of the level of stress, the cattle will shrink the greatest on the way home from the auction as well (Self & Gay 1972). When dealing with the auction mart, work with them for an agreement that would see the cattle sold on arrival or watered and fed appropriate amounts of feed. Perhaps a special sale could be arranged. Negotiate commission and do all you can for the care and comfort of your cattle prior to arrival.

For those who like the idea of an auction market but feel the cattle are too stressed, the electronic auction may be a consideration for you. In the electronic auction the cattle are sold on computer, without leaving the farm. A representative will come out and identify the cattle as to the weight, breed, etc. and decide with you where the cattle will be weighed and the conditions of sale that will apply, such as pencil shrink. The cattle are put up for sale and you can choose to accept or reject the highest bid. A commission applies but shrinkage can be kept to a minimum.

The opposite concept of the auction sale is the farm gate sale. In the farm gate sale, the owner of the livestock becomes the agent for them. In this case, as in all sales, it is very important to know the value of your livestock according to their place in the price spread. There are no costs to having a farm gate sale, all sales are FOB the farm, commission does not apply and the only shrinkage would be a pencil shrinkage at a predetermined point of sale. It is most advantageous to own a scale that is legal for trade when planning farm gate sales, but not owning a scale should not be a deterrent. The farm gate sale is the ultimate achievement and should be researched carefully. Talk to others who have had farm gate sales and ask them what made the sale successful. Talk to the buyers that will be participating. You will find good buyers willing to help you with your sale. The cattle are in better condition when they arrive at their destination, go on feed quicker and suffer less sickness or death loss.

Another form of farm gate sale is the feedlot direct sale in which the owner sells directly to the feedlot. Here again, there is no cost to having this sale in terms of expense or hardship to the cattle. The conditions of sale are predetermined and feedlots bid under those established conditions. All sales are FOB the farm and the owner acts as the agent for the cattle. The only real difference between feedlot direct and farm gate may be the buyers. Any and all buyers may bid in a straight farm gate sale and only feedlot buyers usually bid in a feedlot direct sale.

Under special sales we consider such things as preconditioned, preimmunized, special breed, staggered entry and presorted sales. The area to which it really applies is the ranch sale. The ranch sale can be operated in several ways and it is a combination of auction market and farm gate sales. The cattle are gathered on the ranch, range or community pasture and are sold directly from there by an auctioneer. For a fee the auction house will advertise the sale, bring buyers to it and sell the cattle. The stress on the cattle will be dependent on the round up and holding conditions. The cattle themselves may sell by owner or same sex, same size load lots, the latter being more attractive to buyers. They may be sold on an incoming weight less a pencil shrink or the weight at point of sale.

Forward contracts are used to limit the risk in feeders or fed cattle. When you enter into a forward contract you enter into a sales agreement for the future. Who knows what the future holds? You may not know the price in the future but you are responsible to know your cost of producing that calf or feeder and have the opportunity through forward contracting to lock in a price that is greater than the cost of production. A forward contract can stretch six months or six days into the future depending on the details of the deal. You may forward sell cattle to a feedlot a month ahead of time through a verbal agreement, but long term forward contracts are written and detailed agreements that carry strong obligations to both parties. If you are planning to do some forward contracting in the future, I suggest doing a portion of your production.

Niche markets are those little perks that we all can't get in on and wish we could. There are those that invest and promote special breeds and some raise calves for the calf hide market. There are all sorts of special beef products, cooking schools and innovative selling schemes. Our export sales are very important to us and often buyers from other countries want certain types and cuts of beef and producers work with processors to meet their demands. From the production side we see a lot of fall calving or split herds, thus eliminating the risk of selling that calf as a feeder and as a fed animal into a saturated market. The only limit on niche markets are your imagination and willingness to assume risk.

If there is one way to really know what your cattle are worth, performance wise, it is through retained ownership. Retained ownership can take on two faces, fed by the owner or fed by a custom lot. It depends very much on your goals. You can background cattle to a variety of weights and they will be worth a variety of prices depending on the market conditions and the type and quality of cattle you have. For instance, if you want to stretch calves into yearlings, their diet will be considerably different than those which you aim to sell as backgrounders in February, and you would not try to market them in May. A decision regarding retained ownership should be based on the end market and then the cost of production, not on the amount of feed on hand and then the market. If you choose to have your cattle custom fed, take the time to shop around for the feedlot that meets your needs. Custom lots have a variety of management techniques and billing practises but most are experts at marketing cattle.

Within each of the six areas of marketing, there is a variety of options that are determined by conditions of sale and your individual attention to detail. Finding a marketing alternative that suits your individual needs is the crown to your efforts, but your marketing strategy is a year round job and lifelong challenge. It should be the primary consideration for genetic selection and all subsequent management decisions.

If we resist change, our children will pay for our primitive attitudes towards the handling and care of our livestock. Our industry will only survive if it remains competitive. It is time to accept the fact that change in our marketing system is not only necessary but inevitable. It is our responsibility as producers, to be sensitive to the signals from the consumer, processor and packer, respond with cattle worth competing for and to market them in a safe and humane manner. If we do not, we may pay the ultimate price, the loss of our exciting and beloved industry. I believe we can do better. All it takes is vision.

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CONSUMER WANTS

- Gerry Brechin - Codville Co.
Saskatoon, Saskatchewan

I have been asked to talk on what types of Beef are selling at retail - Block Ready or Sides - Hinds - Fronts - Conventional Beef. What type of beef are we the retail willing to pay a premium for.

Consumer Trends

1. Convenience Culture
2. Working Women
3. Prepared/Take Out
4. Microwave
5. Meal Time Fragmentation
6. Home Delivery
7. Shopping - Phone, Fax, T.V.
8. Cocooning
9. Grazing
10. Diet Dichotomy
11. Specialty Foods
12. Ethnic Population
13. Ethnic Foods
14. Quality Service/Product
15. Freshness - Value added
16. Shopping Habits
17. Aging Population
18. Smaller Households
19. At Home Entertaining
20. Disposable Income
21. Product Ingredients
22. "Low" Foods
23. "New" Purchase Mentality
24. Food - Away From Home
25. Food Safety

Consumer Trends

1. Convenience Culture

Consider the rising number of two income households. Consider the amount of time we have on our hands to enjoy ourselves - sports - leisure, we have no time for cooking we want to eat and run. Remember how it first started from the TV dinner - pop it in the oven for thirty minutes and then it was done, then to the restaurant and then to McDonalds and then fast food became acceptable. Today take out foods from the restaurant, the 7-11 or from your supermarket. None of this pop it in the over number, today in the microwave and two minutes later it is done.

2. Working Women

The married at home woman is no longer there - she is out working. Women are better educated - waiting longer before they raise their family, having fewer children. With women working outside the home, they now have money to spend but less time to spend it in. As a result, they demand convenience. They like to get in and out of the store quickly - the express line.

3. Prepared (Take Out)

To the retailer, the expansion of this time had helped offset the competition from the fast food restaurant chains. It is bad enough competing with the food stores now we have to offer an alternative to Fast Food chains. Today there is getting to be a good variety of these prepared take out foods in the supermarket - foods that are good in quality and taste.

4. Microwave

(How many here own a microwave?) An appliance that now has over 80 per cent of the households that own one. An appliance that even children can operate. The microwave has certainly cut down on our cooking time fitting in well with the changing time.

5. Meal Time Fragmentation

Today with smaller families and family member on different schedules, meals are not always on schedule! Breakfast - lunch - supper. Instead of all the family sitting down to eat, they eat when they can.

6. Home Delivery

Caters to the service convenience culture.

7. Phone - Fax - Television

Ties in with home delivery. Phone in or fax in your grocery order. Happening today! Maybe not as much in Canada but it is very present in the States. Television shopping - watch on TV then phone in and order. Saves going to the store.

8. Cocooning

People who want to seclude themselves away in a get away or home; want to eat in on weekends - making a gourmet meal for themselves. This return to the home base attitude is causing retailers to develop instore cooking services and merchandising skills (recipe cards).

9. Grazing

What does that remind you of? Snacking - a snack is something that must be eaten between meals or in lieu of meals, be light, non filling, fun, great tasting and held portable. Grazing brings the concept of snacking to its ultimate level. Grab and eat all day long.

10. Diet Dichotomy

Health conscious consumers eating more veggies and whole grains than ever before and then wash them down with pints of premium ice cream. Like let's have a salad for lunch and then order a big piece of cheese cake. Or in your case - we want a nice juicy steak but we do not want any fat on it. Dichotomy - two different pairs. On one hand, people are seeking diet, wholesome healthful foods and on the other, they eat premium ice cream laced with fat or other desserts. Diet for so long and then pig out. WORKOUT - PIGOUT!

11. Specialty Foods

Mexican - Italian - Ukrainian! People are looking to experiment tangilize their pallet. Looking for excitement.

12. Ethnic Population

Cater to whatever ethnic groups were in your area. Today could include many races.

13. Ethnic Foods

Could be perogies, cabbage rolls, baklava, pizza; American dishes today egg rolls, curry, on and on.

14. Quality Service/Product

15. Freshness, Value Added

This desire for fresh foods is somewhat driven by consumer concerns for food additives and preservatives. People are concerned about what they are eating NATURAL FOODS. Natural beef.

16. Shopping Habits

Have changed - Sunday shopping - family shopping - male shopping. Instead of buying groceries once a week or month but stopping on the way home or I feel like _____ tonight.

17. Aging Population

Baby boomers. People born between 46-64. "Greying of America" or "Canada". Our average age now is 31.6 years old. In the year 2000, it will be 38.5. In years every 4th person will be a senior citizen.

18. Smaller Households

Our households are shrinking.

In 1961, the average households was 3.9

In 1986, the average households was 3.1

In 1986, in Saskatchewan it was 3.2

1991 expected to be 2.7

The average household is shrinking but have more money to spend.

19. At Home Entertaining

Similar to cocooning. Either order in or buy prepared foods to take home and eat in front of their home video centres. Now with VCRs, Satellite dishes, movie rental stores; this needs to seclude themselves at home in front of the TV "Couch Potatoes".

20. Disposable Income

Consider both people working - better educated - better jobs few or no kids, means more money to spend.

21. Product Ingredients

There is a very strong health and fitness oriented group of consumers out there. Their fascination with what is "good" for them. Think about Hormones - Stimulants - Steroids, Drugs, Residue. BAD PRESS.

22. "Low" Foods

Low in calories - low in cholesterol - low in salt. Created the push for health conscious products on the grocery shelves.

23. "New" Purchase Mentality

Trying of new products - many many dollars are spent on marketing new products. It is new, it is better, it is more improved.

24. Food Away From Home

Spending more and more food dollars outside of the home.

25. Food Safety

People are concerned by what they eat. What is happening in the future. Not only issues of the quality but of animal welfare of environmental issues. You and I probably had a hard time believing about the methane gas from cattle is destroying the atmosphere.

By looking at what has been happening to the retail market in the last several years, it is not hard to see what has happened. With the advent of working women, no one is at home cooking the meals. So when we both get home from work, we have to scurry to get supper on the table. Thank God for the Microwave. We have now become a eat on the run society and now with people being much better educated, they want to know exactly what it is they are eating. FOOD VALUE - CALORIES, healthfulness of the product.

How has Beef transformed itself with these changing times?
What type of Beef do stores purchase today?

Conventional Style - bought in the form of SIDES, HINDS, FRONTS, RACKS, CHUCKS, LOINS, HIPS, etc.

Boxed Beef or Bloc-Redi Beef - beef that has already been broken down partially timed boned and cryovaced.

Conventional Beef

Today, few stores use conventional beef. The day of the meat buyer going in and tagging beef for specific chains is almost over. There are several reasons why chains do not use conventional beef. The most obvious are the costs involved with having to have a large highly skilled work force at store level, higher costs involved in larger coolers, cutting rooms, storage costs. Fresh beef at store level creates other problems - has to be sold right away - excess product had to be reduced to move - reducing the profit margins. More work less money.

There is still some conventional beef being sold in the form of freezer beef but sales in this area are declining and it is directly due to what is happening at the consumer level.

My own IGA stores are probably the last who still sell a large amount of freezer beef and this is due to the fact that the majority of our stores are situated in rural country towns. The rural population still likes large quantities of meat and other products on hand.

Boxed Beef or Bloc-Ready Beef

This type of beef is where the majority of our stores beef products are coming from. Some chains buy beef that is broken down and done up the same as block ready called but not cryovaced. Only chains that are close to their supply can do this and not encounter bacteria problems.

The advantages of a Block Ready Beef program are as follows:

1. **CARCASS SHRINKAGE**
 - almost eliminated by vacuum packaging
 - reduces shrinkage
 - more sanitary - less contact with bacteria
 - increased shelf LIFE - stored at 0 degrees C 21-28 days
 - fewer exposed cuts in cooler - less trimming
2. **INVENTORY CONTROL**
 - more precise at store level
 - no inventory guess work - know exactly what you have
3. **STORAGE SIMPLIFIED**
 - cartons are marked and easy to handle
 - cooler space can be better organized
 - less cooler space required

4. **INCREASED CUSTOMER APPEAL**

- counter can be filled on as you need basis
- no need to prep early in week
- extra product can be easily brought in during peak periods
- beef can be aged easily

5. **INCREASED PRODUCTIVITY**

- less time spent breaking beef
- more time to spend merchandising
- more time to stock counters and look after customers
- less time receiving beef

6. **HIGHER PROFITS**

- uniform cost - broken to certain standards
- less risk of improper breaking
- better productivity - schedule personal better bring in needed
- equipment lasts longer
- better sanitation - longer shelf life

You can certainly see why most stores have switched to Block Ready Beef. Better productivity and control over wage costs have to be a major factor. For the retailer, it has meant spending less time breaking and prepping and more time to spend on merchandising, making the valued added products that create a better profit on this bottom line. These value added areas are:

- **DELIS**
- **SAUSAGE MAKING - FRESH AND SMOKED**
- **STIR N FRY - FRAJITAS**
- **KABOBS - MARINATED PRODUCTS**
- **FANCY CUTS - STUFFED ROASTS, BBQ READY < BACON WRAPPED FILLETS, ETC.**
- **CUSTOMER SERVICE**

There have been some innovations in this block ready area in the last couple of years. The packer is looking to the value added areas as well. What can they do to make their product better so not only can they make more money but attract a following that will use their product? We have seen small cattlepacks consisting of three sides and two sides.

Streamlined versions of these cattlepacks. Streamlined beef has the brisket and shank removed and cuts down on the trim aspect. You get only the cuts you want not a lot of regular trim at a high block ready price.

From streamline, we are going to counter ready where the beef is processed to the level that it is ready to cut directly to the counter. Trimmed down to 1/4" standard, many of the muscles seamed i.e. HIP - inside - outside - eye of round - CHUCK - boneless bottom blade - top into wedge and mock tender. The merchandising done now at the packer level thus letting the retail use less skilled workers there for cutting wage costs and simplifying the job that has to be done.

There have been some disadvantages involved in using block ready beef. The largest is how customers perceive it. Does it not taste the same or have the freshness of conventional or has an odour to it. In reality, properly processed block ready is better. It can be kept fresher, cleaner and aged better than any conventional beef. If there is a slight odour by opening and airing out the block ready cut prior to cutting reduces this odour. This odour is just the gas that is produced in the bag, it soon dissipates when the bag is opened.

Any problems that we have encountered are usually with certain packers who insist on cleaning up over excess product after its quality has deteriorated. Something like at store level - freeze a box of spoiled product and when you bring it out it is still spoiled. We have this mentality at store level throw it in the freezer and forget about it or block it and that solves the problem.

Beef that is boxed after its quality has deteriorated is still deteriorated when it is cut. This type of practice has caused most packers are boxing in three days or less from kill. The majority of block ready is done at source of kill thus eliminating many bacterial or sanitation problems. By extending the shelf life and reducing the shrink related problems whether bacteria related or to our cutting practices to increasing productivity at packing house and retail levels, beef will be able to be offered at reduced costs if these areas of profit drains are reduced. Shrink factors on fresh beef could be as high as 10 per cent weekend carry over loss could be as high as 3-4 per cent. Traditionally, stores had to build in an extra cushion in their shrink and cutting losses.

Block Ready beef has been the way to go for most chains. It has helped them retain their quality and yet increased their efficiency. Being competitive - being the best whether quality whether service has been the dream of many chains. Finding an advantage over the competition.

What is the advantage to Canadian Beef - that is the question isn't it?

How can we - you, I and all the other people involved in this food chain take advantages of what we have?

Canadian beef has a place in the market place. It is leaner, healthier, tastier and more tender than any of its counter parts.

Canadian beef is natural beef!

Keep it lean - Keep it healthy
Keep it tasty - Keep it tender
And you will keep it selling
Keep it selling - the real answer

The more people want to buy your product - the more people that buy your product will be the more you get for your product.

The nineties will be a market place for niche marketing.

Your industry will be able to find several areas that fill consumer needs because of the technology available to you.

- You will be able to do things better.
- By growing cattle that have less cholesterol. Market studies are showing certain breeds as having less cholesterol.
- Raising cattle that are tastier, better marbled and yet have less fat.
- Cattle that have more meat to bone ratios.
- Cattle that are more healthful.
- Branded cattle - whether from a certain ranch, a particular breed, a certified program that exemplifies the varieties of a particular breed.
- A grading system endorses good Canadian beef by making some regulations that force the retail and packing house and food service industry to use identification on all imported beef products.
- A grading system that recognizes certain facts. Marbling, tenderness, taste. A system that recognizes yields.
- To a grading system that can help identify problems before they happen, where something can be done to get that premium price.



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THE PUBLIC'S PERCEPTION

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Perception, as defined by Webster, is, "an immediate or intuitive recognition, the result or product of perceiving, as distinguished from the act of perceiving". This is an instance when the precise definition is important to focus our attention. Perception is therefore the result of what is perceived to be fact whether or not it turns out to be the ultimate truth. This paper will be a discussion of what the author perceives, that the public perceives, to be the truth about agriculture, with emphasis on the livestock industries, of course.

Introduction

The consumer (the public) and the producer are separated by an increasingly complex system of marketers, processors and retailers as well as physical distance. The producers and the consumers are themselves more complex as to their needs and the activities that colour their expectations. There is good reason to examine the perception of the public about food and agriculture because it is more than a possibility that not only are they incorrect in some cases but that such mistaken attitudes are working to the detriment of themselves and the overall food producing system.

There was a time when the producer could reasonably assume that the livestock auction and the grain elevator were closely linked to the final market and prices were an accurate signal of the supply and quality required by the system. However, with the globalization of the food system the decisions on the needs of the market and who will provide what quantity is determined by a few food consortia with immense economic powers. Clearly, not only the public's but the producer's perceptions could be inaccurate in such an atmosphere.

A major portion of the static that exists between the producers of food and, not only the consumer, but many of the intermediates in the system, is the interpretation put on facts by the media. The amount of information, the accuracy of the presentations and the specific items that are targeted have increasingly become the basis for the public's perceptions, right or wrong, about agriculture.

A new phenomenon is the power of the single issue activists to condition the perceptions of agriculture. The result is, that the former practices wherein the farming industry initiated change from within, has shifted at least partially to one of reacting to external pressures from interests such as animal welfarists and environmentalists who usually have little direct association with the farming practices they criticize.

A most crucial factor conditioning the public's perception of agriculture is their own overwhelming power over the price and the manner of presentation of the articles they purchase and their insensitivity to anything but their own direct welfare. It

has been many decades since the producers of food could consistently extract a reasonable return from the marketplace for their investment and labour. The result is that governments have had to introduce some means of diverting taxes to the producer. This has led to a range of systems, from the discredited central planning approach of Eastern Europe, to supply management, to market management, to direct and indirect subsidies, to market protectionism and finally to the "made-in-Canada" system of government supported income insurance plans. All are difficult to defend in a society where the public's perception is so directly related to their out-of-pocket expenditure on food rather than a knowledge of the methods and costs of production.

Related to the aforementioned problem of extracting a fair return from the market by the farmer, are the political decisions which must be made in the name of all people but which are intended, initially at least, to support agriculture. The farm organizations must be very forceful and occasionally strident in their lobbying of governments, while governments in their turn must pay attention to each separate lobby seeking an audience and accept the criticisms of the public for their proportioning out of the tax dollar.

Ethics in Agriculture

The greatest struggle for the farming system and the processing and distribution sectors of food is to appreciate and accept that there is an ethical aspect to the current perception

that the public holds of the food system. To illustrate, we no longer stone sinners, or permit slavery because on balance it was agreed that the reasoning for those practices was no longer acceptable. And more recently, society has questioned the uneven relationship of men and women, the protection of the rights of individuals and even the manner of conducting wars.

In recent decades the treatment of animals, the responsibility of the state to allow any group to speak out, and overlaying everything, the responsibility of all levels of society for the protection of the environment have been raised as ethical concerns. As agriculture responds it will be necessary to respond to criticisms, examine its practices in the light of this new awareness and be prepared to justify its' positions.

Animal and Environmental Activists

The public perception in the area of animal welfare is worth studying because much of it has arisen reasonably recently and therefore the producers and much of the public are unfamiliar with its directions or significance. Underlying the public's idealized view of domestic animals (often referred to as anthropomorphic), is their outdated image of the mixed farmer with his (or her) small assemblage of plows, cows and sows etc. This is reinforced in children's stories and even in the background for current advertising or drama where a rural setting is required. This may at first seem to be a strength for the producers counteracting the charges by animal rightists of abuse

of farmed animals. But it is more likely that it has the opposite effect, confusing the public when they are told that the real culprit is some other kind of corporate or factory farmer quite unlike farmer Brown and his cabbage patch and his battles with Peter Rabbit.

It has taken a tremendous amount of publicity coupled to dramatic displays by the animal rights movement to raise the specter of animal abuse to be an international issue. It is costly as well to maintain the public's interest at a high level in order that the more extreme condemnations of animal farming will not wane before some permanent changes are enacted and regulated.

One often hears the complaint from agricultural groups that the public hardly knows that their milk comes from a cow, etc etc., and that greater efforts should be expended to narrow this knowledge gap. Knowledge in order to better understand our environment and our place in it is always good, but it should not be mistakenly assumed that suddenly being confronted with barn smells or great vats of curing hams will necessarily provide the urbanite with a positive image of their food supply.

Inevitably, positive attitudes win out over negative ones and truth over falsehoods, because it is our nature to want our lives to be pleasant. It will not take the millions of dollars such as the animal rights movement has had to spend, if all the agricultural sectors emphasize the positive and the truth. Replacing chemical advertising which pictured farm sprayers going up and down the field, with explanations of the improved safety

of the newer herbicide releases, is an example of the positive. Similarly, removing the raw steak and substituting a broiled one on a plate with vegetables and garnish shifts the emphasis from slaughtering to eating. Quietly and continuously correcting the misinformation on beef, pork and poultry meat analysis and making it available to writers and media producers increases the comfort of the consumer. That there is now a code of practice for each class of farmed animal and having this factor promoted constantly at exhibitions, at auction barns, through public addresses and having it inserted into politician's speeches is the necessary kind of reenforcement of the appropriateness of the food production system. This assumes, of course, that the production systems truly are sensitive to criticism and prepared to improve and even exceed these standards.

It was mentioned earlier that inappropriate changes to farming practices should not be allowed to persist as a public perception or become entrenched in regulations. Examples would be the generally unchallenged misinformation on cholesterol, or the regulations in Britain on percherries for laying hens and in Sweden on outside runs for farmed animals. Threats of this type can be seen in the banning of North American beef in Europe as being unsuitable food and the elimination of cattle from the Bureau of Land Management lands in the U.S. as being destructive of the environment.

The constant pressure in the U.S. to enact legislation involving a changed method of caring for farmed animals is part of the strategy of the extremists in the animal rights movement.

Their attempts, as a first step, to have it occur in Canada and then use our act as publicity against U.S. federal and state governments is not yet recognized by many in Canada for the threat to reasoned response that it represents.

There can be little doubt, when reading press reports, but that farming is considered one of the villains in the environmental crisis. Unfortunately many of the challenges have some validity and the farming sector is most inept in responding because there are logical defenses in most cases. But the logical explanations are too complex to be easily communicated to mass audiences, as for instance the reason why grain can be fed to cattle without depriving hungry humans or why surpluses are not automatically shipped to the "starving" peoples. Another is the media's happy promotion of the isolated over-use of manure in Holland as the standard problem all over the world. Similarly, the depletion of the Ogallala aquifer is a condition which is extended without research or question to apply to all water systems. Because methane is a gas involved in global warming, the domestic ruminant which does produce a small fraction of the total as a byproduct of fermenting forages unfit for human consumption, they have become promoted, as a group, a serious problem. This piece of misinformation is then extended willy-nilly to criticize intensive feedlot management, and then as reason enough to ban cattle from the public ranges, thence to stop eating beef which is liberally laced with hormones and finally to imply through some unexplained line of reasoning that they are all being abused in any case. The environmental

protection movement has become the unwitting promoters of the objectives of almost every activist group that criticizes the way that agriculture is managed. The general public would rather not believe the more strident single issue critic, but with such inadequate public relations on the part of the farming sector the public's acceptance of any promotion, no matter how irrational, when tied to a rational and seriously addressed movement like protecting the environment, is predictable.

Meat Safety and Quality

There is not much that can be done now, beyond admitting and explaining the errors, for such items as the thalilamide babies, the overuse of DDT and the Chernoble meltdown. It is part of the risk of industrialization, as is farm accidents, was leaded gasolines, is the initial losses when organ replacement is first tried, and will be the difficulties in controlling atmospheric pollution without crippling the economy. Polls are consistent in reporting that the general public are suspicious about the safety of their meat supply. Fueled by news reports and reinforced by the misinformed school and medical systems, the possibility of antibiotics and even worse, steroids being present in meat in dangerous amounts, is widely accepted. Unfortunately, there is enough hard evidence of errors committed by producers, that reversing the perception is very slow and difficult, after the fact.

Inspection and prosecution is inevitable when dealing with

the protection of the food supply, and it would be judicious for the farming and food processing industries to continue to lead in implementing systems that protect the public and the producer as well. The model of WHMIS which applies to the control of the use of industrial and research chemicals could be studied for some of its useful features, and also as an indication of what could happen if agriculture does not move ahead of regulations driven by public perceptions.

Meat quality, and this means mainly eating quality and the reduction of fat, is a serious consideration for the livestock producers. That the production system has responded well to the demands of the consumer is obvious at the farm and feedlot level but the message becomes confused in the pipeline to the consumer. It is a specific example of the problems that develop when dealing in a global market where the producer and end user are not able to communicate directly through the marketing system. The processing and retailing sectors are taking less and less responsibility for marketing the producer's products, as they once did, and are concentrating instead on the mixing and matching and promotion of any product that will yield a margin of profit. They do not have the same need to cater to their source of raw materials leaving farmers with the unfamiliar responsibility for their own accurate market intelligence. A ready example is, that grinding quality beef from Nicaragua, which can comfortably fit into the North American beef mix, is not only in competition with beef from Australia but more so with poultry from Georgia, U.S.A. and the farm subsidies of CAP in the

EEC. Closer to home, the Canadian beef producer and therefore exporter of feeders and finished cattle and carcasses, is undertaking a beef grade change, not to satisfy their largest market, the Canadian consumer, but to cope with the quite different public perception of quality in the U.S. created for the convenience of that country's processing and retailing sector.

Farm Organizations and Institutions

A significant portion of the public's perception of agriculture is created through the complex system of how each sector deals with its clients and how those clients react and report on their dealings. Governments make policy and enforce regulations, and it is very important whether they leave a positive impression or otherwise. For instance, in the detection and reporting of residues in food products. It was left to the private investigators to carry out and publicize the analysis performed for antibiotics in fresh milk and bacteria in fresh poultry, while the government belatedly, after the poor perception of a problem had been created, released the more accurate data that supported the high quality of the products on the grocery shelf. Similarly, it creates negative impressions when the supply managed systems have to be forced into having processors and consumers on their boards as though there was something to hide. The many commodity groups presenting their individual interpretations of the situation in agriculture

creates a confusing picture and potentially a negative reaction from the public when their support is required in moving ahead with a modern food production system.

In Summary

The public perception of agriculture is important since interferences that are initiated by those outside of food producing systems can and do limit the industries ability to adjust and produce. It is far more sophisticated a problem than just how the public views the farmer. It involves the nature of the global market place, the power structure in the food processing and distribution sectors, the political situation at any particular time, the presence of dedicated single issue groups opposed to agriculture, the realities of environmental problems, the uncoordinated response of agriculture and finally the ethics of the practices that are being followed.

The public are being addressed by professional lobbyists from business and from the activist sector while the response from agriculture is left largely to well meaning but often inappropriate amateurs. It is a long way, in terms of steps in the system, from a bushel of wheat or a fattening steer to a frozen food item hundreds or thousands of miles away. But it only takes a single phone call or newspaper interview to get the public's attention and carry their displeasure to government, and even less effort and time to spread misinformation throughout the media.

The farming sector and those involved in the steps in getting food products to the consumer will make a grave error if collectively they are reactionary and fight criticism with claims of being misunderstood or abused. To make reasonable changes before a practice is challenged, to involve the consumers in the examination of the readily acceptable as well as the sensitive areas. It is important to produce accurate descriptions of the manner that food is produced and to openly examine the ethical issues surrounding our dependence on the environment. Such open, accurate and honest efforts will blunt the destructive practices of those that would injure the agricultural industries. A favourable perception of agriculture cannot be assumed any longer just because we see ourselves as working for improvement or because everyone must consume our products.

CATTLE HANDLING SYSTEMS THAT WORK

L.T. Jones
Regional Livestock Specialist
Alberta Agriculture

During the formation of the Canadian ranch cattle industry, most of the handling methods developed in the U.S. were used. The lariat was the means of restraint, and the cow horse was the anchor. Heading and healing were the traditional ways of holding animals for doctoring, branding, dehorning or castrating. "Heeling" with a lariat was the fastest method for calf handling. On some ranches, it remains the chosen method.

Using ropes and horses required only a large corral, or an open flat stretch where a herd could be held. Skilled ropers and trained cow horses were common on cattle ranches.

Our cattle industry is not a ranch industry, and has only a little of the old ranch traditions. We are primarily grain farmers, who may or may not have cattle. Few if any good cow horses or ropers are around on our farms. That is part of our problem. The other, and most important drawback, is that we have few working corral setups that can be used as good examples for our beginning cattlemen.

Rather than dwell on what we don't have, I wish to discuss the parts of a good cattle handling setup that we should have.

The Holding Corral

This is the basis of a good handling facility. The cattle to be "worked" are stored in the holding corral for processing.

The holding corral must be just as strong as the rest of the handling system. It can't be a barbwire enclosed field. It doesn't

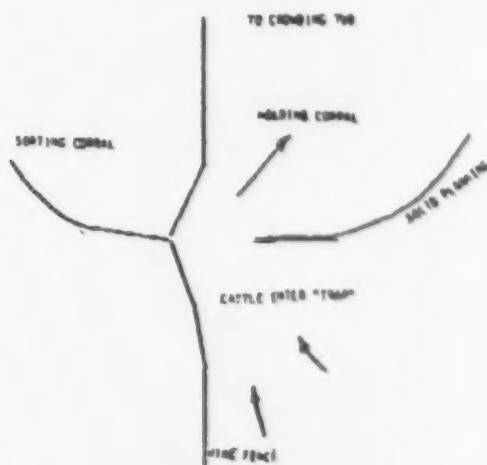
have to be big enough to hold the whole herd, but should hold at least a liner load of cattle.

The access to the holding corral requires careful planning. The gateway has to be a "trap" that cattle will easily move into. A "wing" provided by corral type fencing should lead the cattle to the corral. The closer the cattle get to the "trap", the stronger must be the fence.

Cattle go through a "fight" or "flight" reaction. In the majority of cases, flight is the usual reaction -- the cattle tend to run away from the handler. When trapped, with no place to go, some cattle will fight, or charge the handler.

During flight, cattle almost never travel in a straight line away from the handler. They tend to circle, and keep their rear vision (which is excellent), on the person moving them. For this reason, all corral handling systems should be curved, never square or with right angle corners.

A good handling system must move cattle from the large holding corral, to the small squeeze. The plan must be clever enough to provide the cattle with a seeming escape from the handler, and in the process they work themselves deeper into the trap.



SEE APPENDIX OF
THIS PAPER FOR
DIAGRAMS.

The holding corral may simply be a 12' wide alley leading to the crowding tub. If the holding corral is a large area, it may be difficult to push cattle into the crowding tub because they can circle back into the large area of the holding corral. By putting a dummy fence in the holding corral, this problem can be eliminated, without losing any of the capacity of the holding corral.



Cattle "flow" when they travel in a group, and curved fences will lead them to the "trap".

The use of solidly planked fences to prevent cattle from seeing movement, or other cattle, will make handling much easier. Solid planking one side of the holding pen near the entrance gate will encourage cattle to enter the gate rather than stop and watch!

Before deciding on the location of the holding corral, first decide whether you will have a right or left side brand to apply in the squeeze. The cattle should leave the holding corral through the crowding tub, chute and squeeze in a right hand direction for a right side brand, and to the left for a left side brand.

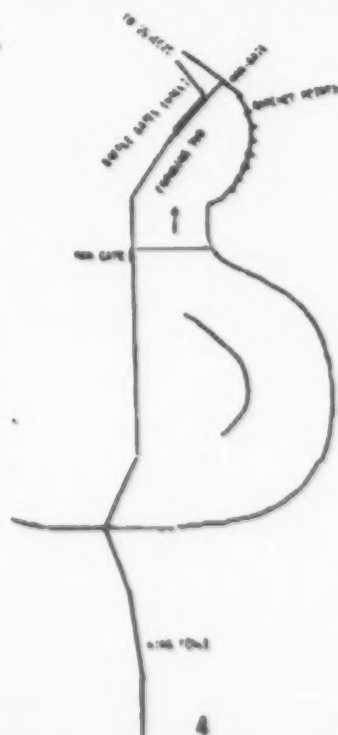
From Holding Corral to Crowding Tub

There should be a short space between the holding corral and crowding tub, closed by a gate at the holding corral end. One way to save space is to incorporate the dummy fence, previously described to prevent cattle circling in the holding corral.

Whatever method is used, the alley leading to the crowding tub should be 12' wide. An escape man-gate should be positioned somewhere in the alley.

The crowding tub needs careful planning, and the gate should lock on a ratchet point at each post in the perimeter of the tub. The maximum area is $\frac{1}{2}$ a circle with a 12' radius (gate), or 226 sq. ft. The curved side of the tub is usually about 25', with ratchets at posts approximately 2 $\frac{1}{2}$ -3' apart. By the time the crowding gate strikes at the first ratchet point in the tub, about 147 square feet of "trapped" cattle are secured (10 cows, 15 yearlings).

It is important that the tub and outside fence of the holding corral be solid planks.



The Crowding Gate

The crowding gate must be heavy, easy to push, and solid so that cattle can not see the handler behind them. The extra investment in plywood to cover the gate planks to create a solid wall around the cattle (so that they will neither have flight nor fight reactions), is money well spent. In fact some operators value solid fences so much that they start right at the entrance to the holding corral.

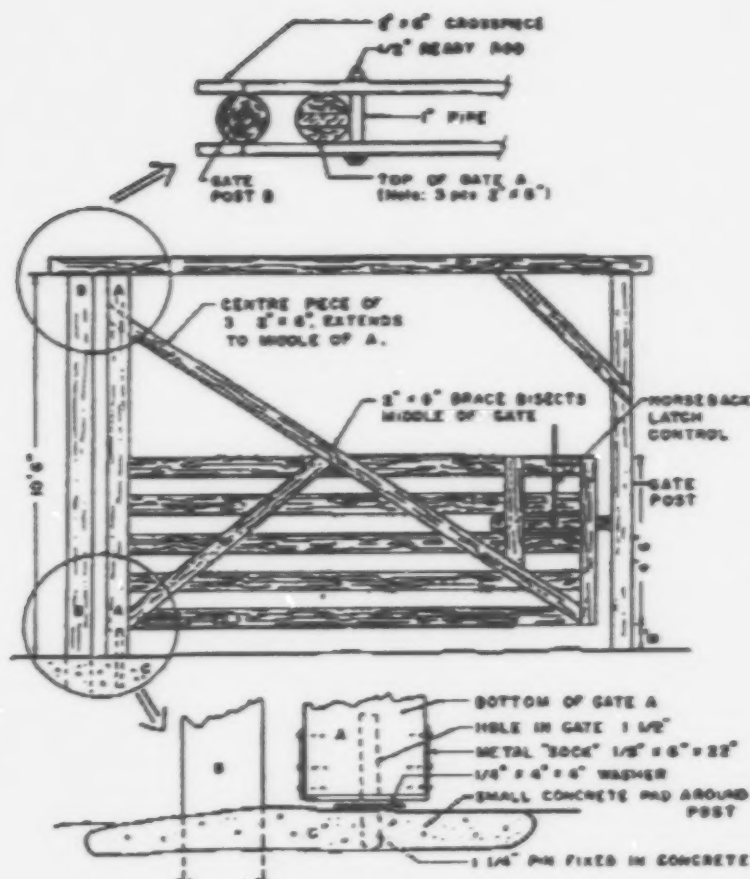
The crowding gate is usually 12' long, and swings in an arc behind the cattle, and is the final point of the whole trap. Once the crowding gate swings behind the cattle, they are caught for good! The crowding gate should have a ratchet latch which prevents cattle from pushing it against the operator. A man-gate should be located near the swivel end of the crowding gate providing direct access to the chute and squeeze.

This man-gate is exposed when the crowding gate is locked on its final ratchet point in the tub, but hidden when the crowding gate is fully open.

Another man-gate should be located in the last ratchet panel of the tub, to provide quick exit to the loading chute, once the crowding gate is fully closed.

The Gates

Possibly the most important part of a handling system, gates must be strong, quiet, able to swing at least 300° and must not sag or pull the fence down. One of the best designs is that used for over 100 years in southern B.C. Originally made from Jack Pine rails, these gates can be made from planks, rails or steel, provided the hinging principle is observed.



Beyond the Crowding Tub

The crowding gate forces the cattle into an initial "V" end of the narrow single file chute leading to the squeeze. The chute curves in an arc to the left for left side brands, or to the right for right side brands.

The "V" sides can be hinged to swing open to deflect cattle to the working area on the inside of the chute arc. The latter gate is great for providing access back into the tub, but also as a secondary chute access leading to a calf cradle.

The Working Chute

The chute leading to the scale and/or squeeze lines the cattle up in single file. Many different opinions exist about the width of the

chute. The reason for this is that there are many different sizes and ages of cattle worked. The following recommendations should be considered.

- a) If only yearling, or small frame cows are worked, then the finished inside chute width should be 28", with vertical walls.
- b) If large frame cows are worked, the chute inside width should be 32"-34" at 32" height.
- c) Sloped chute walks may be used, with inside width between posts 18" at ground level and 32"-34" at 32" height. All chute walls should be solid planked, with 6" gap at the bottom, and at least 5½' to the top.
- d) The working chute at the outside wall, should describe an arc of a circle that has a radius of 24'. To prevent cattle from backing up, 5/16" chain may be strung across, with a 10' sag. Cattle walk under the chains easily if they are not alarmed by rough handling. Chain settings can be made at various heights.
- e) A catwalk, built around the inside of the working chute will allow easy "pour-ons", or even chute vaccinating.
- f) The end of the chute can be fitted with a sliding door, just in front of the vet gates at the squeeze.

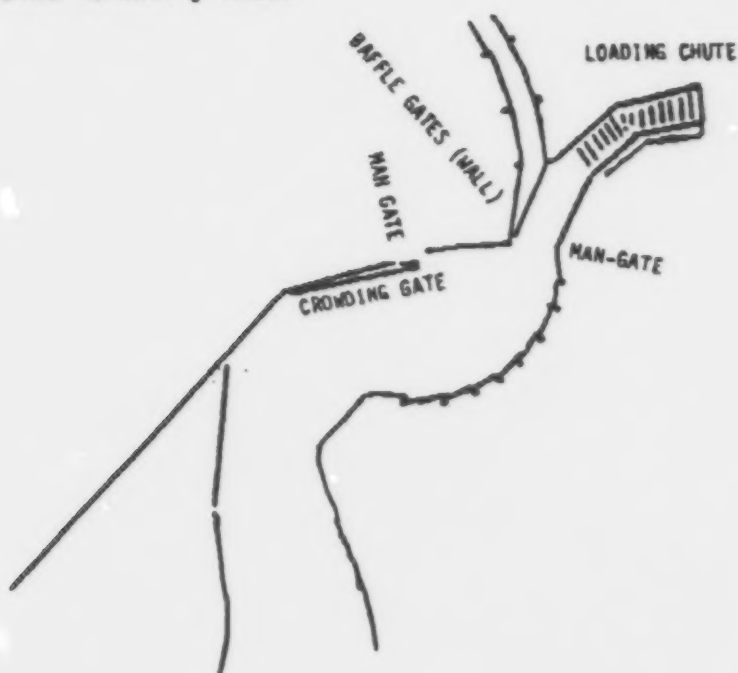
The Loading Chute

The wall baffle gate swings across to deflect crowded cattle from the tub to the loading chute. There should be at least one bend, preferably one-half way up the ramp, so that cattle start up the loading ramp, but can't see the opening into the truck. Use a long ramp (16'), with solid planked sides.

There are two opinions about loading chute width -- either that they are single file width, or oversize, so that if an animal does get going the wrong way, it can turn around easily.

The planking on the floor of the loading chute can be extended 2' to allow for a catwalk on the outside, from the man-gate at the tub, to the truck.

By hinging a section of wall in the loading chute, a trailer loading point is easily made.



The Scale

A single animal scale is extremely useful, and may be installed at one of several different places.

- a) As a by-pass, in the single file chute.
- b) In-line before the squeeze.
- c) Beyond the squeeze, in one sorting corral.

Sliding doors are an excellent means of blocking in front and behind the scale.

The Squeeze

Squeezes come in many sizes, shapes and costs. Before buying one, find out how other cattlemen like that model.

A home built "blind box" with a commercial headgate, and a sliding door behind, works amazingly well. A drop side for branding can be built in.

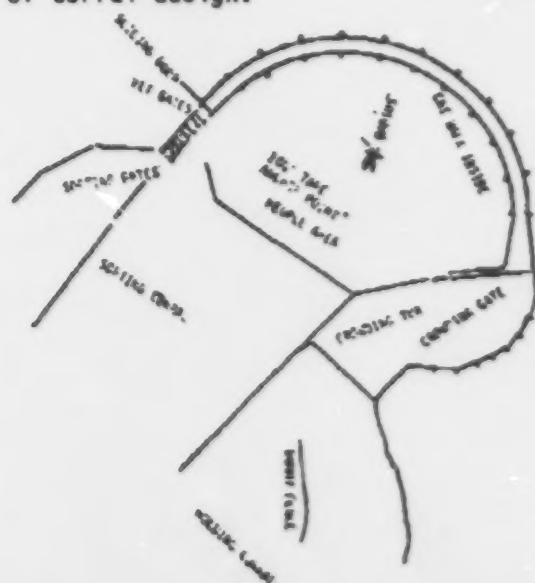
The Sorting Gate(s)

Directly opposite the headgate is the sorting gate. More than one may be positioned if more than one sorting corral is to be used.

The Sorting Corrals

Sorting corral sizes may be more critical than the holding corral size, because there may be other areas cattle can be held before entering the holding corral.

The planning should provide some way of putting cattle easily beyond the sorting corrals, without interfering with the incoming cattle in the holding corral. Cattle should be able to be sorted for re-entry into the holding corral from the sorting corrals -- hence the need for a circular type of corral design.



The People Area

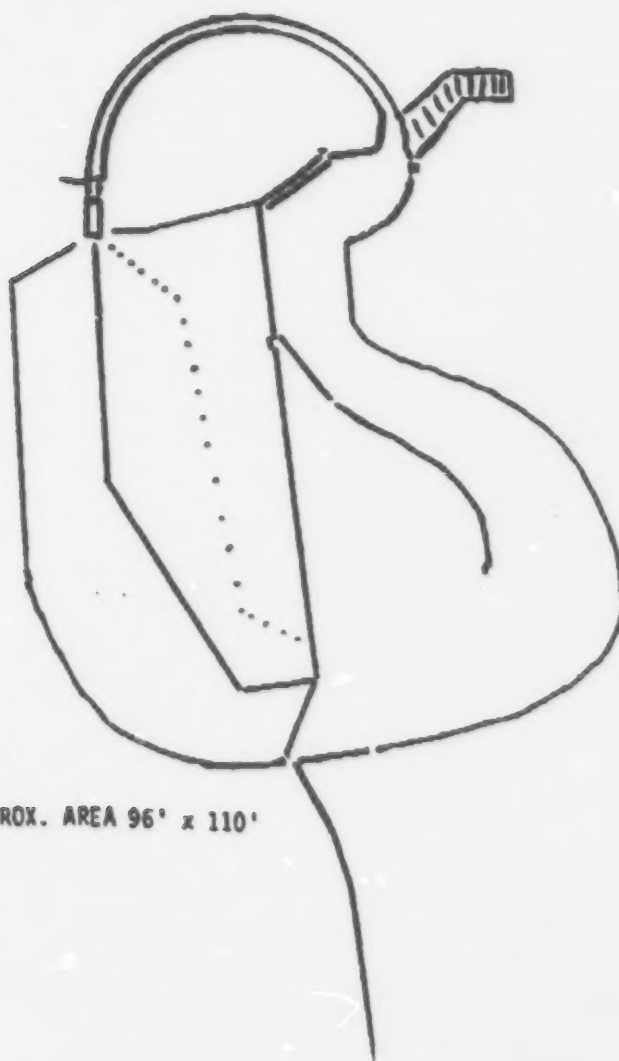
By fencing across from the man-gate at the crowding tub, to the squeeze, a safe working area inside the arc of the chute is provided. This area can also be used as a calf branding area by hinging the inside wall panel of the "V" entry to the circular chute. Calves can be crowded directly into a calf chute and branding table, then released into a sorting corral.

Finally, Some Pointers

1. Stake out your corral plan. Use 6" spikes, with different color flagging to show different post sizes.
2. Join up all the spikes with baler twine and "walk" through your system. Use different colored baler twine for gates, and allow gate twine to open and close.
3. Space your flagged spikes so that your lumber or rails will fit. For 16' material, flagged spikes go at 8' centers; for 14' material, flagged spikes go at 7' centers, etc.
4. Drill undersize holes and pound posts in with a post driver where possible. Use a carpenter's level to get posts vertical.
5. Use spiral nails with washers to spike green planks.
6. Use wood preservatives on all wood.
7. Have corrals at least 5' 6", and preferably 6' high.
8. Rails make excellent corral material, not only for fences, but gates as well.
9. If rough lumber is available use 2" x 6" rather than 2" x 8".

10. Take time to build well, the results will be there for your lifetime on the farm.

COMPLETED HANDLING SYSTEM



APPROX. AREA 96' x 110'

The following corral costs for material (and labour allowance) was prepared by Allan Barnes at High Prairie, Alberta, for his 150 cow herd in the summer of 1988.

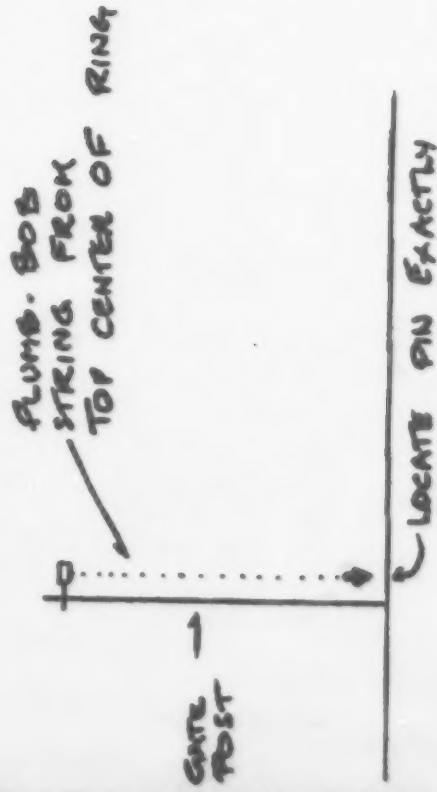
WORKING CORRAL SYSTEM (150 COWS)
ALLAN BARNES, HIGH PRAIRIE, ALBERTA

Post Hole Digger (Rent)	90.00
Posts: 114 posts 6" x 10' @ 8.25	
16 posts 6" x 12' @ 14.60	1197.00
Preservative: Pentox (8 litres)	33.90
paint dye (green)	66.00
Penta concentrate (40 litres)	213.00
Cement and rebar.	97.35
Gravel	45.00
Nails: 5 inch (4 boxes)	144.35
4 inch (1 box)	36.00
Washers: 17½ lbs 3/8"	46.00
Bolts: 50 pcs 3/8" x 3"	19.50
Iron: 6" flat iron x 12 ft -- Redi Rod ½" x 12 ft	40.00
nuts and washers Redi Rod 3/4" x 12 ft	24.30
2" x 2" angle iron x 1/8" x 20 ft	34.60
Pipe: 6" x 3 ft	10.00
Hinges: 2 pair \$25.50 (6" round)	
5 pair \$28.38 (flat iron type)	53.88
Door track and hanger	69.00
*Lumber: 6440 board ft @ 200.00 F.B.M.	1288.00
Labour: 234 total hours (No Charge)	\$3507.88

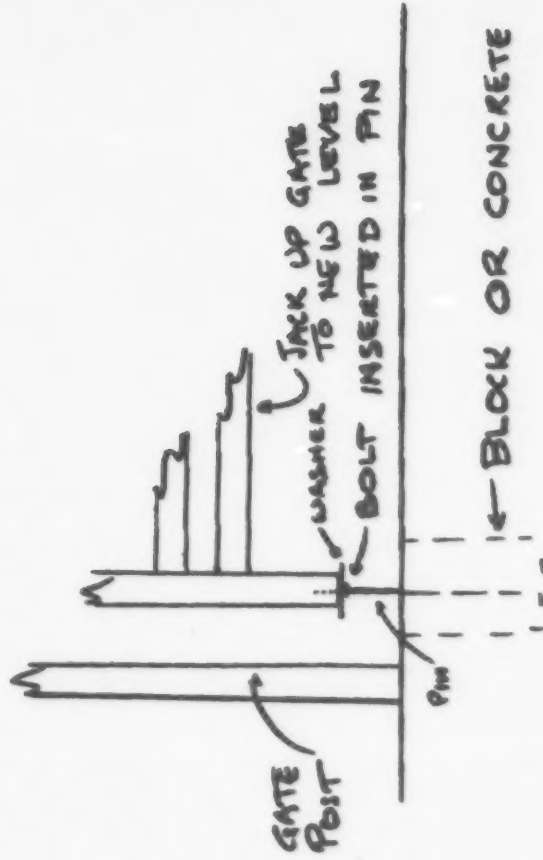
*LUMBER

Crowding alley	88 boards 2 x 8 x 12	1408
Tub and pen	80 boards 2 x 8 x 12	1280
Loading chute	42 boards 2 x 6 x 16	672
10 gates (124 bd ft of each)	50 boards 2 x 6 x 12	600
	40 boards 2 x 6 x 16	640
3 holding corrals	70 boards 2 x 8 x 12	1120
	60 boards 2 x 6 x 12	720
		6440 Board Feet

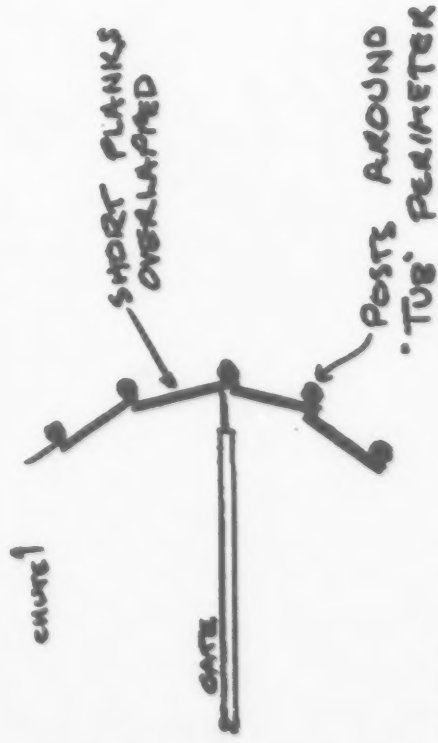
ALIGNING HEAVY GATES, - UPPER HINGE TO BOTTOM PIVOT POINT



TO RAISE GATES FOR SNOW CLEARANCE

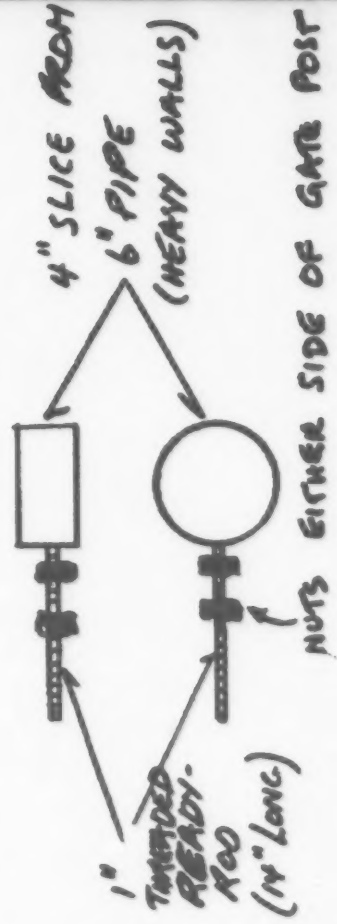
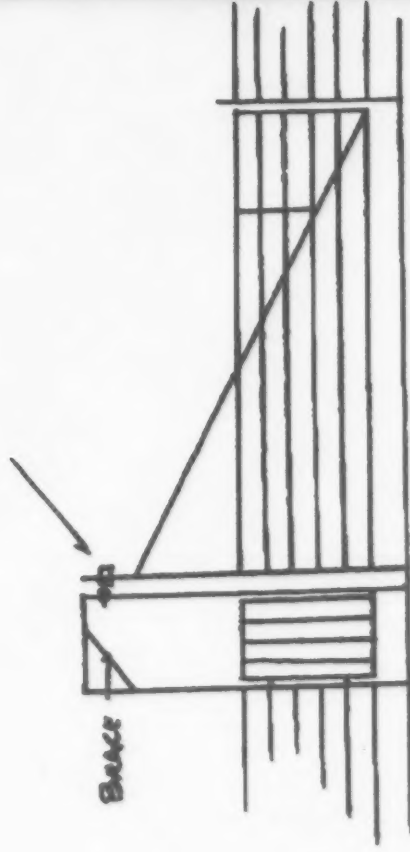


CROWDING TUB WALL CONSTRUCTION FOR CROWDING GATE RATCHET EFFECT

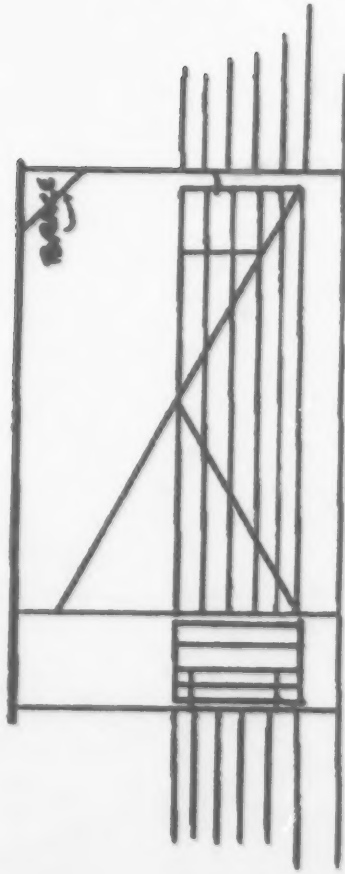


MAKING
 CROWD

GATE RING HINGE, NO FRAME

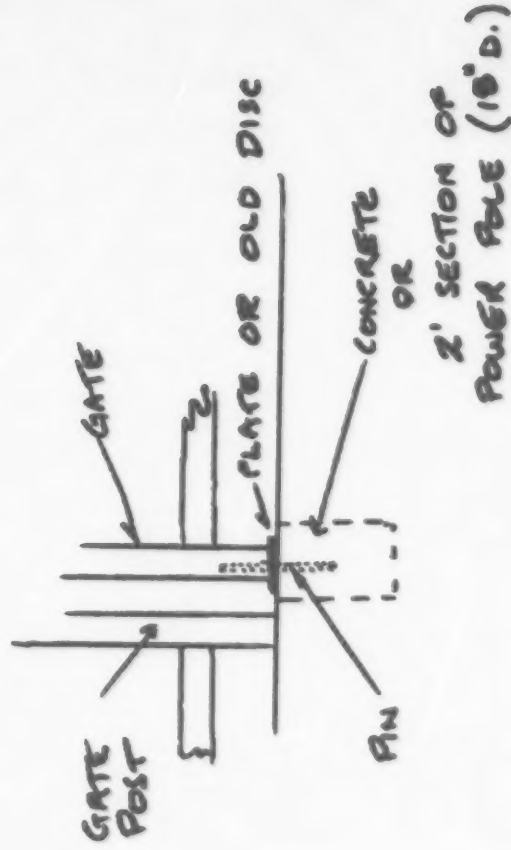


FRAMED GATE



MAN-GATE BUILT INTO LARGE
GATE FRAME INCREASES
ARC OF GATE SWING

BOTTOM PIVOT POINT LARGE GATES

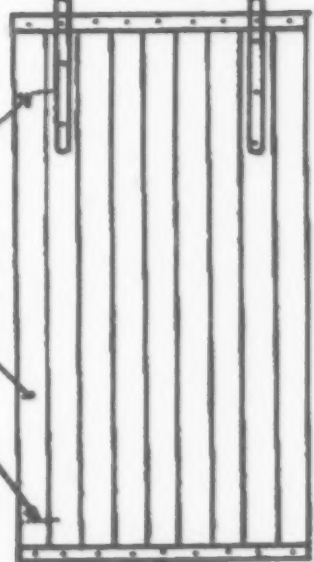


EACH PLANK SPIKED TO NEXT

8x6 PLANKS

10" GATE RINGS

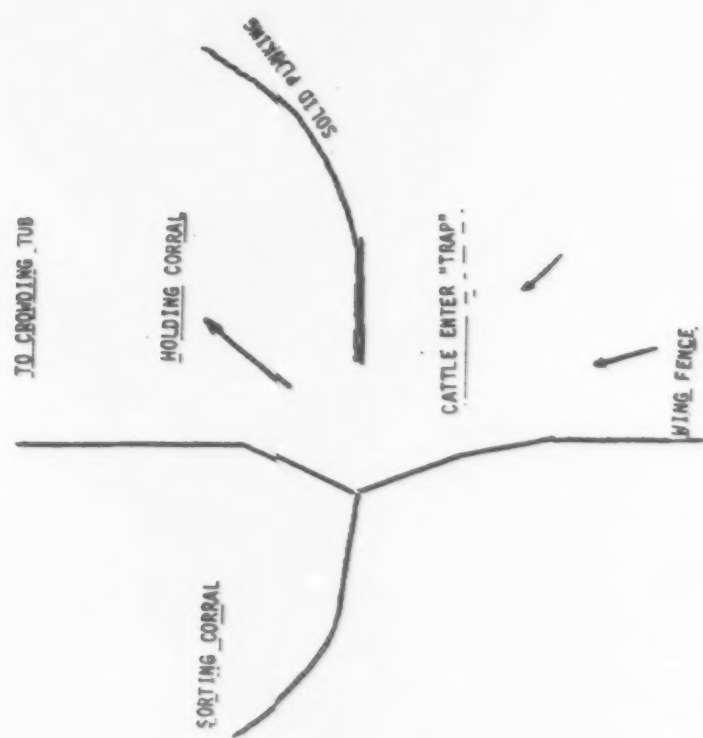
ANGLS BOLTED TO EACH END

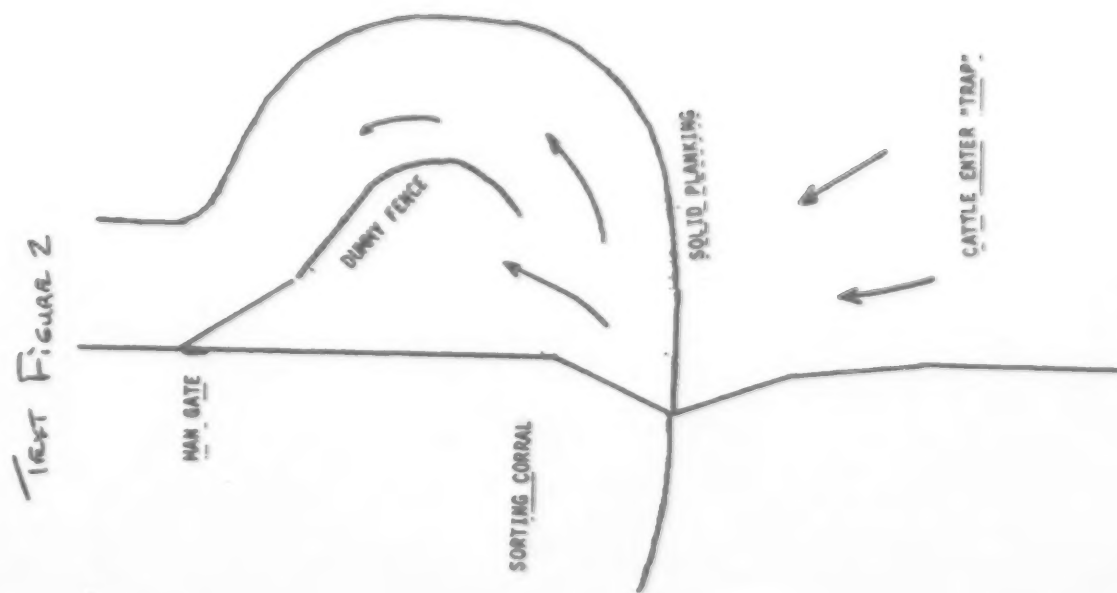
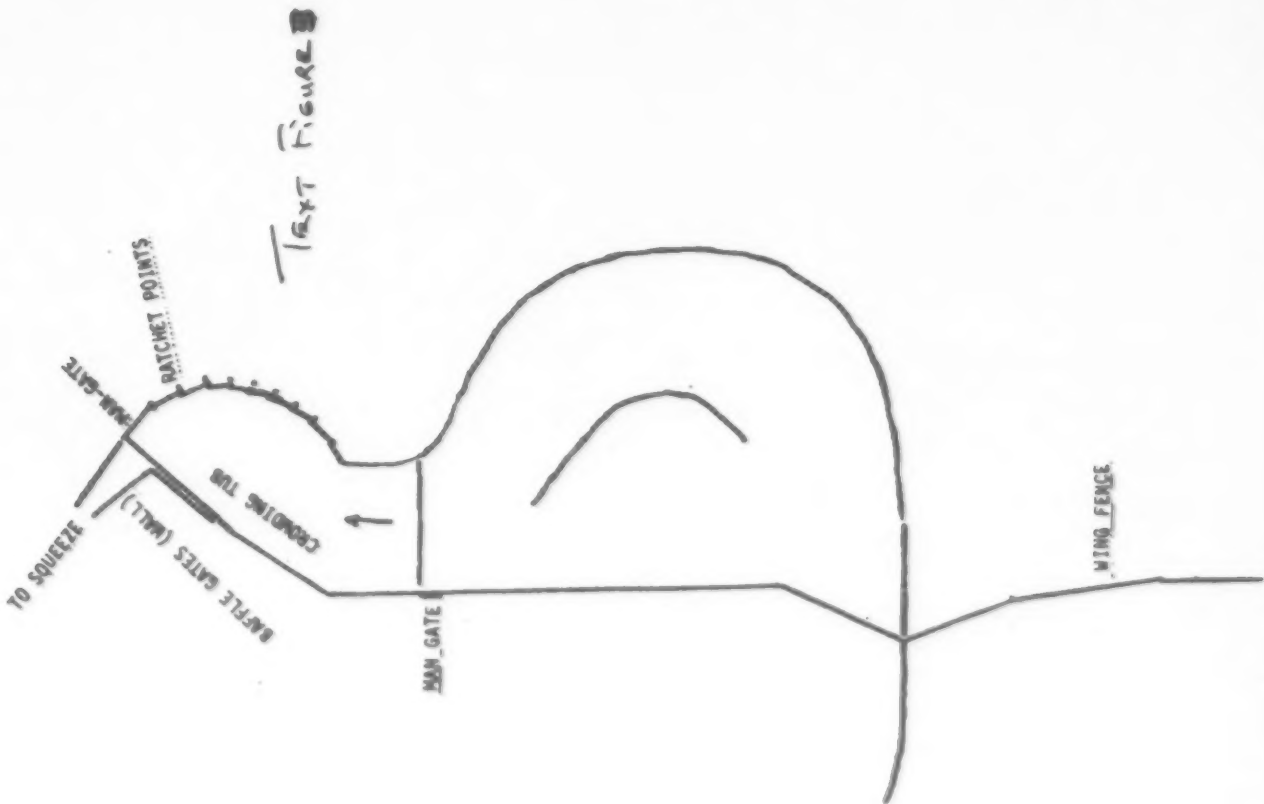


"BAFFLE" GATE WALL

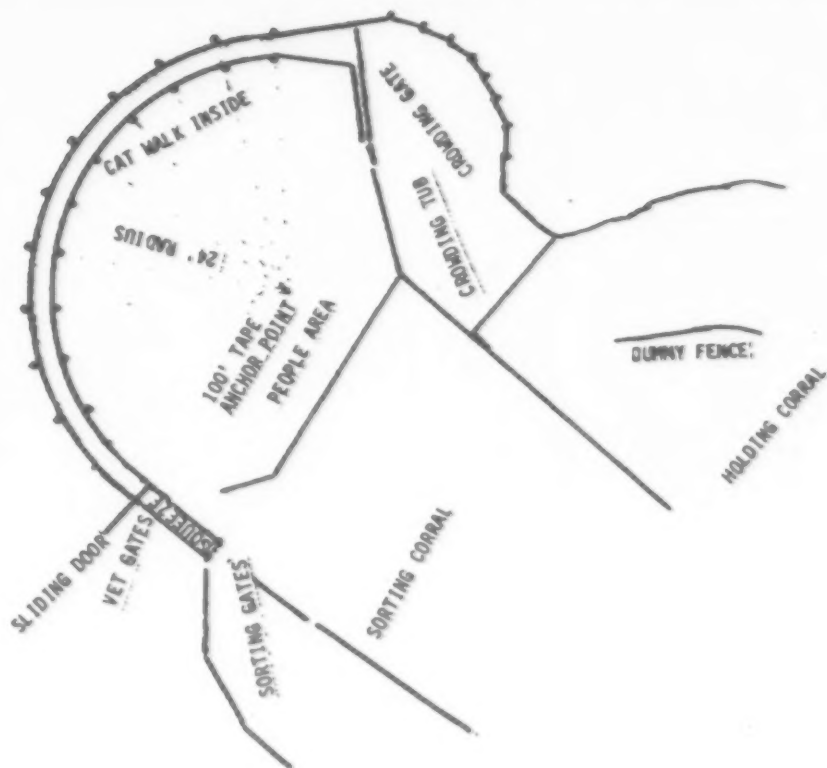
IN CHUTE - SENDING
CATTLE TO LOADING
RAMP OR TO SQUEEZE

TEXT FIGURE 1.

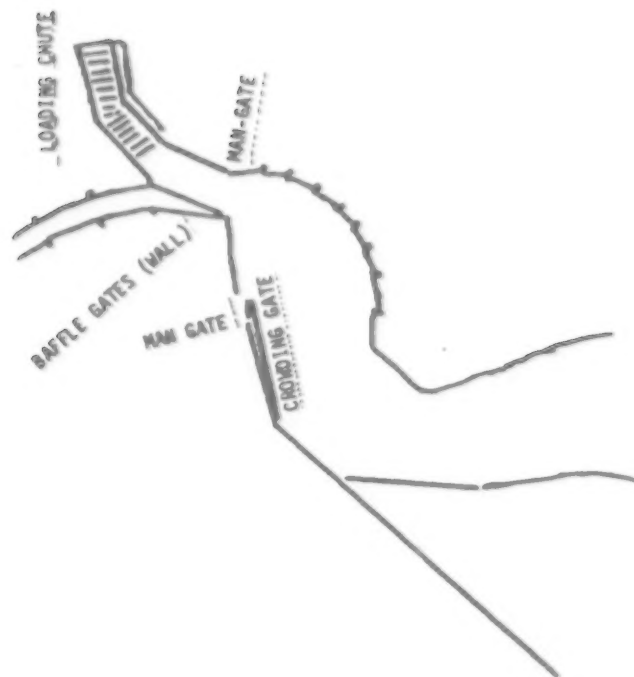




TEXT FIGURE 6.

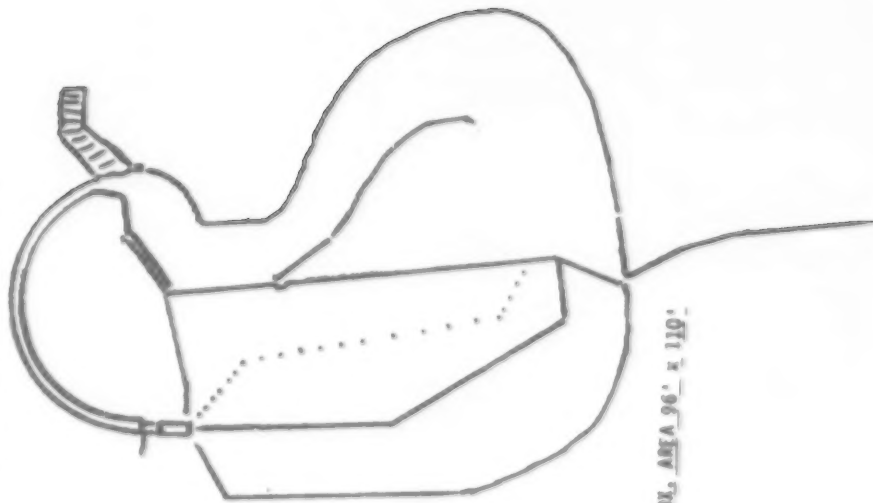


TEXT FIGURE 5.



TEXT FIGURE 7.

COMPLETED HANDLING SYSTEM



APPROX. AREA 96' x 110'